



EXCLUSIVE CONTRIBUTIONS

Non-Cohesive Gold, Its Merits and Manipulation.

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Part V.

The places suitable for the insertion of non-cohesive gold fillings are many, being perhaps one-half the cavities ordinarily met with. Of the remaining half of the cavities encountered, a very large share are suitable for a combination of non-cohesive

**Combination of
Non-Cohesive
and Cohesive Gold.**
and cohesive foil. By means of this combination, the dentist is saved much time and trying labor, and he also gives a more perfect protection to that part of the cavity most difficult of access and treatment, namely, the cervical portion; the non-cohesive gold with its great adaptability being used there, and the cavity margins thereby receiving a protection impossible with any other material. Further, these margins are not subjected to the danger of being chipped or powdered by the plugger as with cohesive gold, on account of the large body of gold constantly between the margins and the instrument.

Fig. 66 represents a typical case suitable for a combination of non-cohesive and cohesive foils. In the bicuspid selected as an example, the cavity extends deeply into the approximal surface, extending to and involving the grinding surface as well.

In the preparation of the cavity, the boundaries are extended well beyond the point of contact with the adjacent tooth, and the cavity opened up freely to the grinding surface. This opening up to the grinding surface is of the utmost importance—nothing but failure usually results without it. The boundaries of the cavity viewed upon the approximal surface are as shown in Fig. 67. The cervical margin has been trimmed down smooth, the buccal and lingual margins being extended from cervical margin to grinding surface in practically straight

lines, and nearly parallel, approaching each other somewhat as the grinding surface is neared. These three walls are undercut as shown by the dotted lines in Fig. 67. The undercut of the cervical wall is the least pronounced of any. A deep undercut at this point is very undesirable. The undercut of the buccal and the lingual walls is greater than the cervical, and extends entirely along these walls from cervical margin to very nearly the grinding surface, shading off to nearly nothing at the grinding surface.

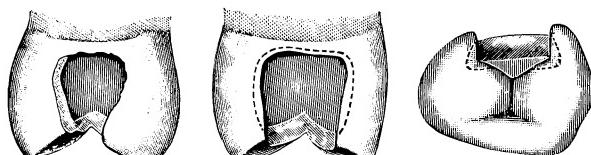


Fig. 66.

Fig. 67.

Fig. 68.

The undercut might be extended entirely through to the grinding surface if desired, but makes a better looking filling if this is not done. The undercut must be extended quite near the grinding surface, how-

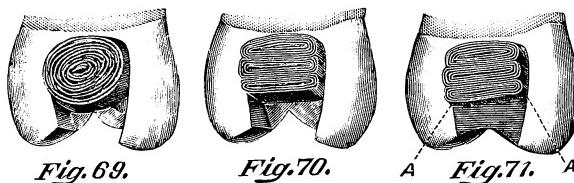


Fig. 69.

Fig. 70.

A Fig. 71. A

ever, as the last third of the filling—the cohesive gold—depends entirely on this undercut for its retention in place after the first two-thirds have been filled with non-cohesive foil, as will be seen later on. Fig. 68 shows the depth to which the undercut may extend, the dotted lines showing the slope and depth which the dovetail should possess.

The manipulation is much the same, as in an all non-cohesive gold filling. A large cylinder is inserted as in Fig. 69. This cylinder is condensed against the cervical wall by means of the foot pluggers F or G, the cylinder protruding from the cavity as usual about one-fifth its length. It might seem impossible to secure room for so much protrusion from the cavity, but unless the normal interdental space has become obliterated and the teeth have crowded closely together in consequence, it can be accomplished. If the interdental space has become closed, the first step should always be some kind of a separation in making any kind of a

filling, so if the tooth is in condition for any other permanent filling, it is also ready for a non-cohesive gold filling, as far as space goes.

The cylinder named must be of such diameter that it will fill completely from lingual to buccal walls, otherwise it will drop out before the next can be inserted. It is not at all uncommon to roll an entire sheet of gold in this first cylinder. The first cylinder is followed by others inserted and condensed after the same manner until the cavity is filled from one-half to two-thirds full as shown in Fig. 70. If properly done these cylinders will be firmly packed in place, and will neither drop out nor be loosened by subsequent operating. This requires that the cavity be prepared as shown to begin with; that the cylinders be large enough to reach from lingual to buccal walls; and that they be thoroughly condensed by the foot plunger and mallet.

The remainder of the cavity is now filled with cohesive gold, exactly as if the cavity was originally no deeper than this unfilled part. The undercut shown in Figs. 67 and 68 must extend enough above the non-cohesive portion that it will give the needed retention to the cohesive gold now to be inserted, and this must, of course, be provided for in the original preparation of the cavity before the insertion of any gold whatever. It must be borne in mind that this undercut must provide the *entire retention of the cohesive gold*, as there is no cohesion or bond of union between the already inserted part of non-cohesive gold and the cohesive to follow, more than would be between gold and so much tin foil. The cohesive gold adapts itself to the non-cohesive gold better than it would to tooth substance, however, as the serrations of the plunger slightly drive the cohesive foil into the non-cohesive cylinders and form a perfect adaptation, though it is purely mechanical and does not exhibit in the least any cohesion proper.

Fig. 71 represents the filling finished out with cohesive foil. In doing this great care must be used to perfectly fill the points marked A A in Fig. 71, at the margins of the cavity where the two foils join. It is very easy to overlook this and fail to get a perfect adaptation at these points, and thus have a leaky filling at the corners of the cohesive gold.

After the insertion of the cohesive gold, the non-cohesive cylinders are keyed in place so that nothing except force sufficient to break the tooth can dislodge them. These cylinders are then finally condensed endwise by the foot plunger H, until they are spread over the walls, just as a rivet is spread by "riveting down," as shown in Fig. 72, thus forming a complete adaptation to and protection of the cavity walls. The method of procedure may be varied after the insertion and condensation of the first cylinder, by the insertion of two cylinders side by side as shown in Fig. 73, which are condensed to place together as a single cylinder, as in

Fig. 74. In placing the cylinders side by side, the first is of course held in place by an instrument of some kind while the second is picked up and put in place. After condensation of these two cylinders, the remainder of the cavity is filled with cohesive gold as already described.

In filling with a combination of non-cohesive and cohesive gold after the methods just described, it is necessary to observe the preparation of the cavity with care. The undercut or dovetail must be carefully formed, always sufficient but never overdone, and must always extend near enough to the grinding surface to provide retention for the cohesive



Fig. 72.



Fig. 73.

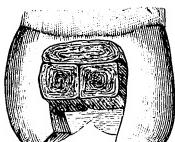


Fig. 74.

gold after the non-cohesive cylinders have been inserted and condensed. This is many times overlooked by beginners in this work and failure results from a cause easily prevented by a little care.

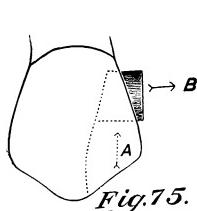


Fig. 75.

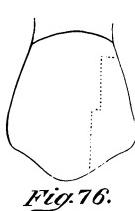


Fig. 76.

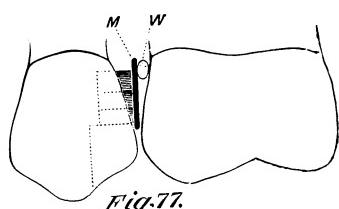


Fig. 77.

That surface of the cavity usually designated by the indefinite name "floor of the cavity," which surface is neither the lingual, nor the buccal, nor the cervical wall—properly the axial wall—and which would be the "back wall" if we were describing a firm place, must receive careful attention. It should be nearly flat, though if somewhat rounded will serve. It must extend parallel with the long axis of the tooth, or practically so. If it slopes as represented by the dotted line in Fig. 75, which shows this wall through the buccal side, pressure upon a cylinder in direction of arrow A, will force the cylinder against the cervical wall, and at the same time the sloping axial wall or "floor" will force the cylinder in direction of the arrow B, and tend to dislodge it, and all subsequent force tends to dislodge it all the more.

In such a case as shown in Fig. 75, this axial wall should be prepared after the manner shown in Fig. 76, forming a "step cavity," which allows proper preparation and avoids opening into the pulp.

**Possibility of
Using a Matrix
Explained.**

It is sometimes desirable to use a matrix in inserting combination fillings. It might be supposed that a matrix would occupy so much of the interdental space that no room would be left for the cylinders to project from the cavity, but the space is

nearly always sufficient for the protrusion necessary. Fig. 77 shows the use of a matrix; in the diagram M, represents the matrix and W, a wedge of some kind to keep the matrix from crowding against the adjoining tooth at the cervical margin. This matrix may be of any kind ordinarily used. The wedge can be made from orangewood, and inserted from either buccal or lingual side as desired.

With the use of the matrix, the cylinder does not protrude the same length from the cavity as without it, but a long cylinder is used just the same, which cylinder condenses endwise as well as flatwise, as it is driven down against the cervical margin by the foot plunger, being crowded against the matrix at one end and against the axial wall at the other, and thus being condensed in all directions at once.

Where no matrix is used, this endwise condensation is sometimes desired, and is accomplished by crowding the cylinder in against the adjoining tooth instead of against the matrix, the tooth serving exactly the same purpose as the matrix. A non-cohesive cylinder can thus be inserted and all needed condensation accomplished even where the protrusion from the cavity is but little.

When using a matrix, the cavity is filled from one-half to two-thirds full as before, and the final portion filled out with cohesive foil as described. All protruding portions of the non-cohesive cylinders are thoroughly condensed down endwise with the foot plunger, and are finally dressed down with finishing strips of files, using the burnisher very frequently, along with the strips, and putting on the final finish of the non-cohesive part by an extremely thorough burnishing down, or it may be finished exactly as cohesive gold is treated ordinarily.

This same method of combining non-cohesive and cohesive foils may be used in all cavities similar to the one described, and which includes a large majority of the approximal cavities in bicuspids and molars, upper or lower, and while some variations of preparation of cavities, and manipulation of material would of course appear in these cases, yet the treatment would be substantially the same as described, no new principles being involved.

There would occur cases which included with the combination

fillings just described, some of the conditions previously described, which conditions would be combined with the combination filling in treatment; for instance, a lower molar might be so decayed that the cavity would include the mesial surface, and also be connected with one or more simple fissures. Such a case would be treated as follows: The main portion of the cavity would be prepared as just described; the fissures would be prepared as in the chapter dealing with fissure cavities, when these fissures would be filled up to the margins of the main cavity in the usual way, after which the combination filling would be inserted as just seen, the cohesive gold binding in place both series of the non-cohesive cylinders.

The author feels that any one who has carefully followed these articles from the first will be able to apply combinations of the principles laid down for the treatment of the various classes of cases without further elaboration, and the purpose of these articles will thus be subserved. It has not been the purpose of the writer to give an exhaustive treatise on the subject of filling teeth with non-cohesive gold, but to present only the principles underlying its use, with examples of some of its most common and practical applications, and to point out some of the merits of this valuable and little known material. While not expecting that all or even a majority will find it expedient to adopt and use this material as the author has done during a long and busy practice, yet the hope is expressed that many may be led to give it a trial and to persevere till they can judge for themselves as to its merits, and to find it the blessing the author has found it to be.

While conscious that full justice has not been done the subject in these limited articles, yet the author hopes they may have done some good, and will be most happy by correspondence to further elaborate any point to any brother "seeking further light."





SOCIETY PAPERS

Ancient Dentistry.

By F. K. LEDYARD, D.D.S.

Read at the Pacific Coast Dental Congress; reported by CLYDE PAYNE, D.D.S.

I have found this a most fascinating subject, and only wish that I had begun years ago to study it more closely. I will quote largely from Dr. B. J. Cigrand's work, "The Rise, Fall and Revival of Dental Prosthetics," now in its second edition. I am also greatly indebted to Dr. W. C. Barrett, Dean of the Dental Department of the University of Buffalo, and former President of the American Dental Association, for many valuable personal letters containing information not yet published.

Some of the specimens which I will show you this evening antedate the founding of Rome, and come from that classic period before those "dark ages" more commonly called "the middle ages," when all arts suffered; this covered a period between the fifth and eighteenth centuries variously estimated at one thousand years. During this time dentistry took a backward step and went into the hands of the blacksmith and barber. Still later a good deal of the surgical and medical practice went into the hands of the priesthood; but early in the fourteenth century, a council of the Roman Church, held in Paris, decreed that the monks and priests be forbidden to perform bloody operations: so to the barber fell the dental art and continued so for centuries. A jesting poet speaks of the barber surgeon thus:

"His pole with pewter basin hung,
With rotten teeth in order strung,
And cups that in the window stood
Lined with red rags to look like blood,
Who shaved, drew teeth and bled a vein."

And to-day in your own city can be seen on Barbary Coast just such a picture, save the "cups lined with red rags to look like blood."

As to what was done in the dental line by that great surgeon, Aesculapius (who lived some 1,215 years B. C.), and Hippocrates, his fourteenth or seventeenth descendant, 450 years B. C., we will not treat; all work at that time by them, in the oral cavity, was (as far as we have any means of knowing) simply in the line of giving relief from pain; and as to the native home of dental prosthetics, it is, as far as I know, only conjecture. Dr. Barrett says: "I have in my possession specimens of ancient dentistry dating back 750 years B. C." The specimen of which I now speak is represented in the lower right hand corner of the plate (Fig. 1) before you. This was taken from Cigrand's work. The authenticity is undoubtedly. He has the certificate of the officer in charge of the exhumation.

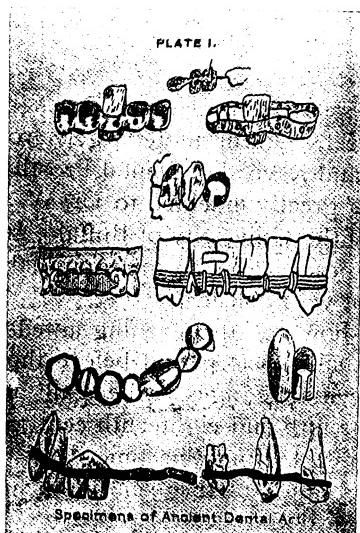


Fig. 1.

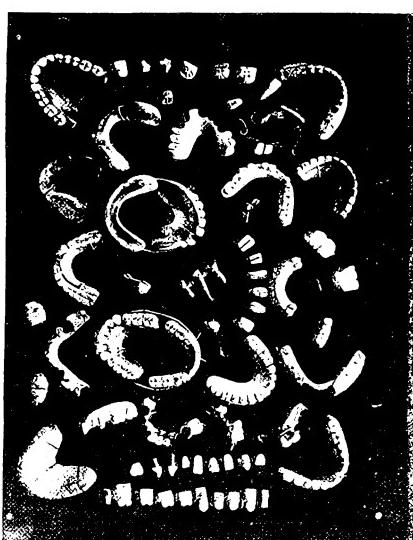


Fig. 2.

tion. The specimen was taken from an ancient Etruscan tomb. The laws of Italy prescribe just how the exhumation of these ancient relics shall be prosecuted, and place the work in charge of specially appointed officers, who are compelled to see that the regulations are carried out. This specimen dates from about the time of the founding of Rome by Romulus and Remus. It consists of natural teeth bound in place by bands of gold, and is the oldest piece of dental art in existence. The artificial teeth crumbled to dust when removed; the small upper cut was made at a comparatively late period, as the teeth are made from mineral paste not over 110 years ago. The next two are copies of Etruscan pieces about 500 years B. C. They are fitted about existing teeth and then metal

pins were inserted in holes drilled through the bands and teeth; then they were slipped in place, but must always have been rather movable.

The next, standing alone in the line, was probably of the same character as the very first one. The next one on the left is of comparatively recent date. The other in the same line is the most curious and valuable piece of dentistry that exists (if it exists at all). Dr. Barrett says: "Its existence rests upon tradition. The original drawings are found in an Italian museum, but only the drawing. It is said to be a piece of Phœnecian work that antedates mine by 200 years or so. It is said to have once existed, but cannot now be located, and consists of teeth held together by gold wire." In the next row below are two pieces; the smaller is quite modern and could by no possibility belong to the era of the other. The one at the left of this, and the one immediately below, is the same piece, but showing a perpendicular in place of a lateral view.

Fig. 3.



PHœNICIAN—THIS ENGRAVING REPRESENTS THE ANCIENT DENTIST
OF WHOM WE SPEAK ON PAGES 58, 59 AND 60.

Dr. Barrett had it made to show the way the added teeth were held in place (i. e.) by a wire inserted in a hole drilled through. The band is not separated and soldered together, but is all one band, simply pinched together at the points at which it appears to join, and then held by a string (Fig. 2—photograph of all of the specimens). The center one in this figure is the ancient Etrurian specimen just described. The one just at the left of this is of the same period, but about 150 years later. The others are carved ivory specimens, etc., belonging to Dr. W. C. Barrett and myself, some of which I will show you later.

Dr. Barrett, at a recent meeting, showed other specimens of unusual interest, as they bear unimpeachable testimony on some interesting points connected with the teeth of man; he says: "Dentists of to-day usually entertain the idea that the prevalence of disease of the teeth is to be attributed to the altered methods of living, to the modes of cooking

food, to change in manner of life, etc." Some years ago Dr. Barrett examined some 2,000 ancient skulls more especially with reference to dental disease. He says: "This examination at once demonstrated conclusively that all the diseases of modern life, except syphilis, were as rife in ancient times as they are to-day." The teeth exhibited showed the existence of pyorrhea alveolaris 750 years before the Christian era.

We now show you an ancient Phoenician engraving (Fig. 3) representing a dentist extracting a tooth from the left side of the jaw of a Scythian king, one Pairisadies by name. This engraving was found upon a Scythian vase discovered in an immense tu-

mulus or buried mound to the west of Kertch, a small town on the Crimean Peninsular. Cigrand quotes Dr. Eames, who says: "The richest of the numberless tumuli so far opened is this one called the Koul, Oba, which was examined under the Russian government. This was a royal tomb, and in a spacious apartment, constructed of large blocks of stone, were found the mouldering remains of the king, his queen, or favorite wife, his servants and horses, and surrounded by his treasure.

Near the splendid wooden sarcophagus, of the kind, were the remains of his queen. On her head was a mitre-shaped diadem and at her feet a vase of electrum, upon which was embossed a frieze of characteristic episodes of Scythian life. Upon the vase are four groups in exquisite *repoussé* work, giving incidents in their life. The king is clad in Scythian costume, a tunic belt at the waist, and full trousers tucked in the boots. In one group he is listening to a report of a warrior kneeling before him. In another, he is bending a bow; in a third, his wounded knee is being dressed, and the last, the engraving before you. This dates 310 B. C.

The renowned archeologist, Belgoni, says: "It is said the Greeks wore false teeth of Sycamore wood, which were held in place by ligatures of gold fastened to the natural ones, and that many of the natural ones were filled with a clay-like substance which appeared to be very durable." The tenth of the celebrated Greek laws of the "Twelve Tables" relating to funeral ceremonies, has, besides others, this direction: "Let no gold be used, but if any one has his teeth fastened with gold, let it be lawful to bury or burn that gold with the body." This dates back some 450 years B. C.

There are many cases of ancient pieces of prosthetic work in various museums and private collections throughout this country and Europe; but time prevents me from going more into detail. There are many claims of teeth having been found filled with gold, among the ancient Etruscans and Egyptians, but Dr. Barrett says: "There is much, that I am entirely satisfied, is false. For instance, I have never seen any reliable testimony

whatever that prophylactic dentistry—filling teeth for preservative purposes—or any of what is now called ‘operative dentistry,’ was practiced until within a comparatively recent period. The assertion that ancient Egyptians filled their teeth rests upon the error of unprofessional observers who mistook the gilding and ornamenting of the teeth of the dead for gold fillings.” He further says: “Gold was never used, in my belief, until within a couple of hundred years or even less, and a great responsibility rests upon those who have accepted unworthy and unsubstantiated testimony for facts and recording it as history.”



Fig. 4.

The majority of the specimens which I show you are carved from hippopotamus ivory; there are three made from elephant ivory. Dr. Barrett says: “Hippopotamus ivory was mostly used, as it was harder, but in either case, could not be worn more than three years. If left out of the mouth it cracked; or ‘stunk’ with a stench peculiar to itself if worn continuously.”

Wishing to become better acquainted with these specimens, I was referred to Dr. Barrett as the one probably best fitted to give the needed information. He very kindly consented to do so, and I sent them on to him, and am greatly indebted to him, not only for this, but also for other information pertaining to this subject. I would like to say here, that although Dr. Barrett was entirely exhausted from his labors in three colleges, aside from his literary work, his practice, and other duties, he was ever ready to give freely of that which he had labored years to obtain, all for the good of the profession to which he has devoted his life, and the associates whom he loves, and that includes every worthy dentist.

These specimens range in age from 100 to 150 years. They were mostly gathered by my brother, Dr. H. C. Ledyard, who spent much time in traveling, and always took a lively interest in all antiquities, particularly those pertaining to his beloved profession. They were mostly gathered in New Zealand, the Phillipine Islands, China and Japan.



Fig. 5.

**Carved
Ivory
Teeth.**



Fig. 6.

This is a full upper set carved from walrus tusk (Fig. 4). Dr. Barrett says: "This was the kind of work used before swaged metal plates came into use. At this time they did not take impressions and make plaster casts to which to conform the plates, but they carved and fitted them to the mouth directly. The prosthetic work consisted of single teeth and partial or full plates thus carved; partial plates were necessarily tied to the remaining teeth." This is one of my oldest specimens. It was made

before 1787. As it was not held in place by the spiral spring, I have not been able to find in what manner this plate was secured; but it must have



Fig. 7.

been by a spring of some kind. This was carved from one solid block of walrus tusk; it has been worn but little, as it is not discolored.

This is one of my finest specimens; it is a full lower set (Fig. 5). Human teeth are set on with metal pins as far back as the molars, which are carved from the solid block. You will see the metal post still remaining where the human teeth have been lost. This specimen shows great skill in workmanship and is about 150 years old.

This shows a partial lower set, carved from the same material as previously shown (Fig. 6). It was not tied in, but was held in place by cement, filling counter sunk sockets, made in the plate by the side of the natural teeth. The cement is quite hard and of a yellowish appearance.

This represents one partial upper and two lower plates (Fig. 7). They are of elephant ivory; two have never been worn. The small piece has, and was, probably fastened to adjoining teeth.



Fig. 8.

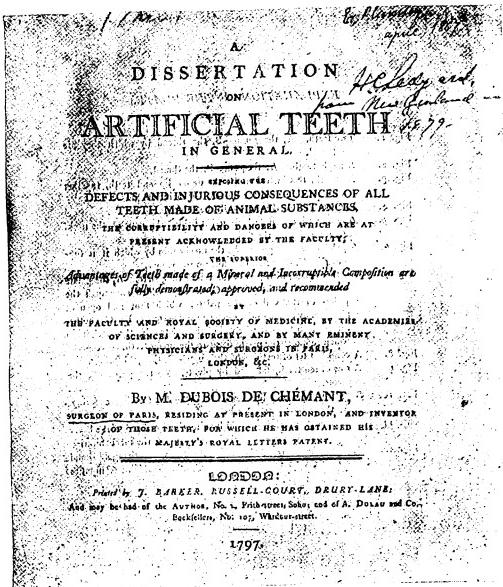


Fig. 9.

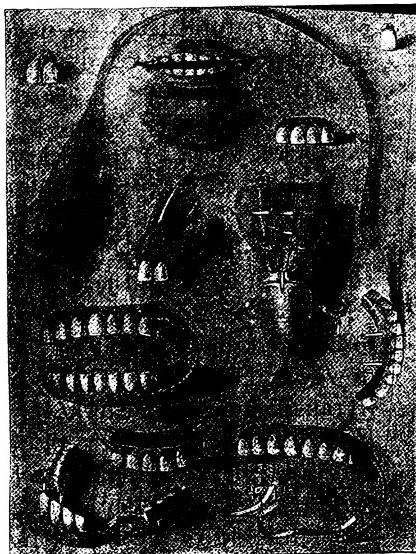


Fig. 10.

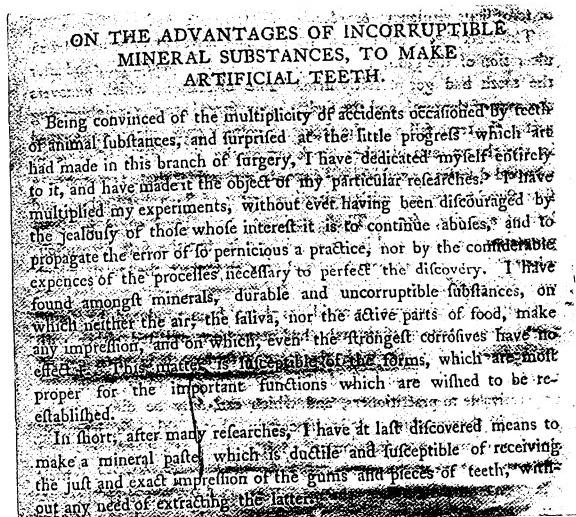


Fig. 11.

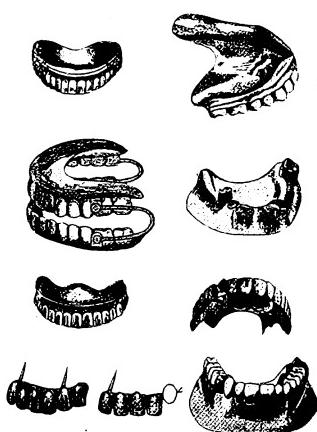


Fig. 12.

Here is a lower plate (Fig. 8), made since the discovery of the spiral spring by M. De Chemant in 1787. It has been much worn, and originally had natural teeth set on with pins; all are broken off and the case worn in its present condition probably to hold the upper in place.

**Origin of
Various Dental
Operations.**

Cigrand says: "To a German dentist, Dr. Meare by name, we should be grateful for inventing the process of filling teeth with gold leaf." In a German volume, published in 1541, entitled, "Medicine for the Teeth," he says: "First scratch and clean with a fine file or chisel, knife, or any instrument, the hollow parts attacked, and fill with gold leaf."

In 1759 Ambrose Parr (familiarly known as the "barber" dentist) discovered the possibility of successfully transplanting teeth; this practice, however, Dr. John Hunter most emphatically denounced. He says: "Transplanted teeth can never recover life," etc. Following this eminent Frenchman came others, all of whom contributed to the advancement of dentistry. "Thus Hemard, a French dentist, manufactured in 1622, ivory dentures; Petrie, a Parisian dentist, advertised himself as a specialist on 'Implantation of Teeth.' (Cigrand). In 1735 the French Academy of Science announced the discovery of caoutchouc, which, in various forms of preparation, was used by dentists as a filling material."

In 1728 Dr. Fauchard proposed, as a substitute for natural teeth, such as could be made of porcelain; this, however, was simply a suggestion for some future inventor. It was left for M. Dubois De Chemant to so perfect the art; and to him is due the credit of bringing porcelain teeth into general use. I have in my possession a very interesting work published by him in 1797. (Fig. 9, Chemant's title page). The title page, you will observe, is difficult to read; but it is most interesting to see with our own eyes the work of that master mind that has done so much for the dental art. This work can be seen, together with other specimens which I have on exhibition here. This, you will see, is "A Dissertation on Artificial Teeth in General, exposing the defects and injurious consequences of all teeth made of animal substances, the corruptibility and dangers of which are at present acknowledged by the faculty."

"The superior advantages of teeth made from a mineral and incorruptible composition are recommended by the faculty and Royal Society of Medicine by the Academies of Science and Surgery, and by many eminent physicians and surgeons in Paris and London, by M. Dubois De Chemant, Surgeon of Paris, residing at present in London, and inventor of those teeth for which he has obtained His Majesty's Royal Letters Patent dated 1797."

Fig. 10 is from M. De Chemant's book just described, and represents.

some of his work; all of these pieces are made from his mineral paste. You will notice the spiral spring in the full set, also how he has arranged it to hold the upper plate in place by resting a frame over the lower teeth. The advantages of this spring are, that it gives more freedom to the jaws, etc. Among the eminent men of that day who were using these mineral teeth were the renowned surgeon, John Hunter. Fig. 11 is from a photograph from a page in Chemant's book "On the Advantages of Incorruptible Mineral Substances to Make Artificial Teeth."

"Being convinced of the multiplicity of accidents occasioned by teeth of animal substances, and surprised at the little progress which art had made in this branch of surgery, I have dedicated myself entirely to it, and have made it the object of my particular researches. I have multiplied my experiments without ever having been discouraged by the jealousy of those whose interest it is to continue abuses, and to propagate the error of so pernicious a practice, nor by the considerable expenses of the processes necessary to perfect the discovery. I have found among minerals, durable and incorruptible substances, on which neither the air, the saliva nor the active parts of the food made any impression, and on which even the strongest corrosives have no effect. This matter is susceptible of the forms which are most proper for the important functions which are wished to be re-established.

"In short, after many researches, I have at last discovered means to make a mineral paste which is ductile and susceptible of receiving the just and exact impression of the gums and pieces of teeth without the need of extracting the latter. I have succeeded in giving to their substance, by a practical process, a degree of solidity which renders it capable of resisting the greatest efforts without breaking or producing any of the effects which may follow from breaking or from the exfoliation of the animal substances hitherto employed.

"The color which is given to this composition is unalterable; the color of gums can be exactly imitated, which is of utmost importance, the deficiency of the jaws remedied and by imitating on the substance, formed at pleasure, the original color which is natural to the parts necessary to replace, a degree of perfection is obtained hitherto unattempted."

Fig. 12 shows specimens of medieval dental art and is from Cigrand's work.

This is a "Report of the Academy of Science Concerning the Teeth, and Sets of Teeth, of the New Composition on M. Dubois De Chemant, Extracted from the Registers of the Royal Academy of Sciences, Dated the 10th of June, 1789."

Royal
Academy
Report.

"M. Darcet and I have been charged to examine the teeth and sets of a new composition which M. Dubois De Chemant has presented to the Academy, and to give in an account of them. The company has been able to judge, as we have, that those teeth and sets very nearly imitate nature, as well by their form and color, as by the portions of artificial gums which support them, and to which De Chemant also gives a very great likeness to natural gums, but what merits for them a considerable preference beyond all those which have been

composed hitherto, is that they are of hard substances upon which the saliva and the particles of food which remain in the mouth have no effect; whereas, the others, made of animal substances, and little resembling natural teeth, are easily spoiled, acquire a dirty color and contract a smell as offensive as it is prejudicial to the health. The matter which De Chemant makes use of is a mineral paste to which, after many efforts, he has found means of giving a natural color, like to that of the teeth which he means to supply. He can mould it into any form so as to make whole sets, half sets either for the upper or lower jaw, portions of sets—when there remain above or below teeth which may be preserved—single, double, treble or quadruple teeth, as necessity requires. The whole sets are put in motion by means of springs of De Chemant's invention, which are very different from those used heretofore, and which not only separate the parts when the jaws are distended, but also allow the side motions. These springs are applied to both sets, even to the upper ones, in a manner as simple as it is ingenious. A mechanism equally simple joins the parts of sets to the natural teeth, which remain; and single, double and treble teeth fit with the greatest facility because De Chemant has found means of boring his paste so as to place pins in them and to make any slides he pleases.

His manner of taking measure of the teeth which he intends to replace adds greatly to the merit of his invention. His process is such that each piece is moulded, as it were, for the place which it is to fill; and as for the whole sets, half sets or any other portion whatsoever, their base receives and surrounds the edges of the gums, or the part on which they are applied, so as to render their position very solid and to prevent the pain they may otherwise occasion. By this process he can preserve as long as he pleases the moulds of all his pieces and can take very exact and perfect measures of persons at a distance, whom he never saw, and provided he be informed exactly of the color of the remaining teeth, he is sure to send pieces which will fit with the greatest exactness as well as if he had taken the measures and placed the teeth himself.

M. De Chemant's paste is very solid; it cannot be broken between the hands without employing great strength.

"The Academy will no doubt permit us to conclude, from what has been said, that the artificial teeth and sets of teeth of M. De Chemant deserve being approved by it, and that it should be proper that history should mention the happy application he has made of a hard and incorruptible matter to an end so useful as that of supplying the want of lost teeth."

(Signed): D'ARCET AND SABATIER.

"At the Royal Academy of Sciences, June 10, 1789.

"I certify the present extract is agreeable to the original and to the judgment of the Academy.

(Signed): THE MARQUIS DE CONDORCET.

Paris, June 21, 1789."

**Appliances of
More Modern
Dentistry.**

The split bean teeth here represented (Fig. 13) are the first put up with pins, baked in the mineral paste; the glazing is only on the labial surface. It is held in place by being soldered to a metal post (Fig. 14), as seen in this old skeleton plate now before you. This is also a very fine specimen of its kind and was made before impressions were taken.

These are the old English clasp plates (Fig. 15), swaged gold, with the old English tooth soldered on to a flat gold backing. These are of comparatively recent date.

This is a swaged clasp plate (Fig. 16), but has human teeth set on metal pins, and has been much worn. The workmanship is very fine.



Fig. 14.



Fig. 13.



Fig. 16.

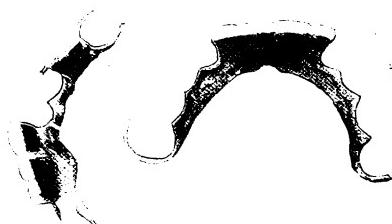


Fig. 15.

The Chinese carved teeth (Fig. 17), from bone or ivory, to fit the vacancies in blocks of one, two, three or more, as the case required; drilled holes through them and tied them in place with ligatures. In two of these specimens the cotton string still remains. They are a great people for large teeth, as these specimens will demonstrate. They have been making them for ages. From the time of the first American dentist, Dr. Joseph Lemaire by name (Fig. 18), who came to this country from France in July, 1778, down to the present, there has been one steady onward upward development; more particularly is this the case in the last forty years. After the taking of impression was devised the making of swages and the striking up of metal plates to fit the mouth became common. Here is a set of old French teeth mounted on silver (Fig. 19), also a silver

swaged plate with block teeth; the molars and bicuspids are in one block; this has a soldered rim and is very nicely made. Even at this time they retained the clasps to hold the partial plate and used the spiral spring to keep full sets in place, but these (Fig. 20) are suction plates. Dr. Barrett sent me these teeth and says: "They are the first mineral teeth made by Hayes of Buffalo. They were about the first gum teeth made; the earlier teeth had none. About the same time Stockton devised the same thing and each placed them on the market without the knowledge of the other. Stockton's pivot teeth were used when I came into

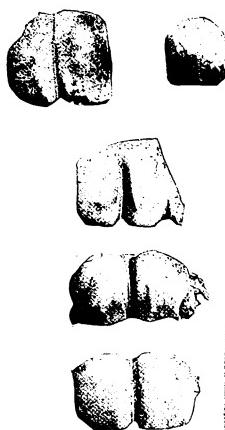


Fig. 17.

before that a promiscuous lot of all kinds and colors were given a dentist to select what he wished, and to match as best he could. He was the greatest of all who manufactured teeth. He

was the uncle of S. S. White and the latter took up the work where the former laid it down. Dr. Barrett says: "The earliest dentists of that city employed calves' teeth largely, obtaining them from the markets. Human teeth could also be bought. I have the first moulds for the forming of artificial teeth ever made, by Hayes, and they are really nice."



Fig. 18.

the profession, and for some time since, but have been superseded by crowns and metal pivots. To a degree, Bonwill's crowns first crowded them out, and since others have been devised."

Stockton was the first to put artificial teeth up in sets, as

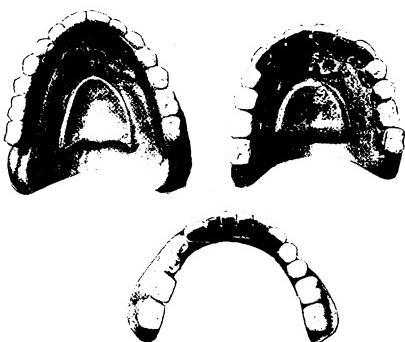


Fig. 19.

This is a wooden plate (Fig. 21), Japanese work, and is for a Japanese widow. It is made entirely of wood and blackened. It has been worn, as the plate is nearly broken in two and was repaired with a piece of steel wire, part of which still remains. They are inexpensive, ranging in price

from one to five dollars. The cheaper sets are all of wood; but in the more expensive the teeth are made of bone, ivory, stone, etc., set in wood and held in place by ligatures. When the Jap-

made this case he was probably seated on the street corner, but now you will find regularly equipped dental offices using up-to-date methods. I am greatly indebted to Dr. W. A. Bryant for a very fine specimen of Japanese work, a wooden plate with teeth all in place, which are made of soapstone.

This plate (Fig. 22), is about eighty-five years old. It is made of ivory, in blocks of three, with a flat groove cut in the palatal surface, through which passes a flat silver wire. The holes are drilled through block and wire and held in place by wooden pins. It is a very crude work and was made in Philadelphia for a great aunt of mine, whom I can just remember.



Fig. 22.



Fig. 23.

This is a plate made for the same person (Fig. 23), after the one just shown became useless. This, you see, is an improvement, showing a swaged plate with the old English tooth, and was made about eighty years ago.

I have necessarily omitted much that I would like to present this evening, but enough has been said to show that we are in the greatest age of progress that the world has ever known, and that dental science is keeping well abreast with the times, and in such a way as to command the respect of the civilized world.



Fig. 20.



Fig. 21.

President's Address.

By HARVEY IREDELL, D.D.S. New Brunswick, N. J.

Read at Twenty-seventh Annual Meeting of New Jersey State Dental Society.

The progress of time, in its never ceasing march unto Eternity, has completed another cycle in the wonderful plan of the universe; and by the blessing of Him whose watchful care is the pledge of our existence, we are permitted to again gather in annual meeting. So rapid has been its flight, it seems as but yesterday since I had the honor and enjoyed the privilege of presiding at one other annual meeting of this society. The absence of our past President was responsible for my infliction upon you at that time; but the fault lies wholly with yourselves, that I am again before you in a like capacity, as it was your ballots that exalted me to the high and honorable position which I modestly hope has been filled, during the past year, with honor to the society and some small credit to myself.

Having assembled together for the purpose of the advancement of our profession, let us each, as we come in touch with our professional brother, strive from the first to do him good; for it is an undisputed fact, that as we help each other, we advance the standard of our profession.

After convening at Asbury Park for so many successive years, undoubtedly it will seem strange to meet here so far away from our usual haunts.

In welcoming you to this Twenty-seventh Annual Convention of our society, I ask you to make yourselves at home in every sense of the word.

As our society would appear to be making a tour of the New Jersey watering places, starting from Long Branch, many years ago; thence at Asbury Park, and now assembling here at Atlantic City, I suppose the next move will be to Cape May. After that, unless the Government can be persuaded as to the wisdom of annexing Hawaii to New Jersey, we will have to apply to Congress to have a little strip of land from somewhere else tacked on to our State for our special purposes like an Indian reservation, or else commence the rounds all over again.

As New Jersey is a great little State, so naturally is our society great, and like the "Hornet" to which we sometimes have been likened, we are always getting our business end in somewhere, and making it hot for those who have disturbed us: the trampling upon any bush adjacent to the home nest of the "Hornet" is always sufficient to bring the alert and *warm hearted* fellows out.

Our secretary and the members of the committees are to be praised for their excellent work and congratulated upon their success in the magnificent programme which has been prepared for your edification at this meeting; of a certainty some of the ozone of this place must have already entered the system of our worthy secretary; where did you ever see an array of more prominent members of the profession than our programme announces as essayists and clinicians? Why gentlemen! we have responses from Rhode Island to California, and from Illinois to Texas, and every one of them is a special treat in itself.

We are constitutionally a modest people, but still we cannot help feeling proud, and justly proud, of the position which the New Jersey State Dental Society holds in the profession; it always did, and I hope it ever will aim for a high standard in all dental matters. Our dental laws are second to none in the world, although by no means perfect, and we are hopeful that before another summer shall have passed, by concentrated effort, we shall have produced a model code.

New Jersey State Dental Examiners. It has ever been our aim to eliminate politics from our Examining Board, and I am proud to be able to attest to the absolute success of our efforts in that direction; some uncalled for criticism has, however, been made concerning the mode of examining candidates before our State Board of Examiners, which has been met by the Board with the statement that they will gladly entertain any committee who may desire to examine into the workings of the Board. It has been the pleasure of our Board to receive and entertain a committee duly appointed by the Examining Board of the State of Connecticut, to look into the mode of our examination, and the members of the committee were profuse in expressing themselves as being well pleased, and they will endeavor to adopt it as their method of operation under their new law, recently passed. We learn also that a committee has recently been created in Missouri, to look into our system of examination, and investigate its adaptability to that State's new dental laws. In fact the matter of regulation of dental laws is creating much interest and is being busily agitated in many if not all the States of the Union, and it is a matter of much regret that our sister State of Pennsylvania will have so much that is to be deplored, to contend with, in the application of their recent dental law.

It is certainly very gratifying to the members of this society that we are so well represented in the National Board of Dental Examiners, and that Jersey wisdom and Jersey counsel has full opportunity to assist in the good work of that body.

With your permission I would like to suggest

Recommendations. the following recommendations for your consideration: First. Why does not this society furnish an assistant to its overworked secretary? No one recognizes the duties appertaining to the office of secretary more than he who has gone through with the works of such office. Our worthy friend who occupies the office of secretary in this society has been doing two men's work for a long time, and because he does not complain about it, should we permit this condition of affairs to continue? Are we not doing him an injustice, as well as ourselves by so continuing it? We certainly desire to keep him in the harness until he insists upon retiring from the real active work; would it not, therefore, be both wise and just to elect an assistant secretary, while we still are blessed by such an able instructor? Second. As medicine is divided into specialties, so does it appear that there is a tendency in our profession to divide the work up in branches; I would, therefore, suggest the appointment of a committee to reconstruct our Code of Ethics, that it may meet and cover our demands.

Third. It is my humble opinion that if a man loves his profession he should not take out a patent upon any method or process of treating or curing human disease or ailments. We have had strong proofs of its being detrimental to our profession, as well as to suffering humanity; I would, therefore, recommend that a suitable committee be appointed by this society to act in concurrence with committees from other State societies which may hereafter be appointed, to petition Congress for the passage of a law prohibiting the granting of any such patents.

Death has taken from us three members, one active, and two honorary. While I did not enjoy the pleasure of a personal acquaintanceship with Professors Abbott and Heitzman, as a practitioner, I knew and recognized their worth, and every member of this society appreciates their untiring efforts to advance the science of dentistry.

At the banquet given by your humble servant last winter, it was my pleasure to have by my side our old friend, the late Dr. George C. Brown, and hear him respond to a toast with this sentiment, "It is better to wear out, than to rust out." Our old friend passed to his reward two days later, and we can safely apply his words to each of our departed friends, and submit to His will who doeth all things well, feeling that that which is our loss, is their eternal gain. I would suggest that a memorial page be set apart in our minutes in honor of these departed brothers.

In returning to you the office of President, my last words shall be of thankfulness to you for the honor you have conferred upon me, and the loyal co-operation I have received. I cherish the hope that I have not been unworthy of the trust reposed in me.

Pulpless Teeth and the Treatment of Roots for Crowning.

By D. D. SMITH, D.D.S., Germantown, Pa.

Read before the New Jersey State Dental Society.

Perhaps no one process in dentistry has developed more methods, or elicited more discussion, than that embraced under the head of "root filling."

So-called "treated teeth" are commonly regarded as the unknown quantity in dental equations, and a vague uncertainty and a dread of consequences seems to attach to them. That such uncertainties are not a necessary concomitant in the treatment of pulpless teeth and roots, but that such teeth are subject to well defined physiological law, although their condition may be in a degree pathological, it is hoped this paper and the discussions that may arise from it, will tend to establish, and that ere long this subject may be lifted out of the domain of uncertainty, and assume a position of certainty in prognosis and assured results in practice.

To bring the matter clearly into view, it seems necessary to briefly review some microscopic characteristics of the teeth. The structures which concern us most are the dentine, cementum, the pericementum and the pulp. A clear apprehension of the nature and office of these structures, and of their relations to each other, seems indispensable to the intelligent and comprehensive treatment of pulpless teeth and roots.

For the purposes of this discussion, it matters little how, when or by what special organ they are formed or deposited. Our inquiry is, what is the special office of each, and what are the relations of the one to the other in this office work in the fully formed and erupted tooth?

**The Function
of
Cementum.**

The cementum, the external osseous covering of the root in young life, is made up essentially of true bone structure, nourished and supported by its peridental membrane, precisely as bone tissue is nourished and supported in other situations. This most vascular of the osseous tissues of the teeth, is distributed over their roots for the evident purpose of giving them intimate and enduring attachment to the alveolus.

It should be noted that this cemental covering varies considerably both in density and thickness at different periods of life, and that thus its true function is often perverted, and its office of sustaining the tooth in the alveolus, materially interfered with. Neither the pericementum nor the cementum contributes to the nourishment or sustenance of the

dentine, unless it be by secondary influences and in a most indirect manner. In intimate association with the dentine of the root, and in communication with the pulp, they are yet perfectly independent of both, in so far as sustenance and nerve supply are concerned, as they derive both of these forces from other and independent sources. Whilst there may be traced in some instances anastomotic relations between the tubuli of the dentine and the vascular portions of the cementum, this relation is not sufficiently intimate even in the thicker portions of the cementum to warrant the belief that any true nourishment is imparted to the cementum by the pulp acting through the medium of the dentine. On the other hand, there are strong indications that whatever influence the pulp exerts upon the cementum is in the direction of calcific deposits, thus tending to deprive it of bone characteristics and convert it into dentine.

It has been intimated that the pulp may promote vascularity in the cementum, but my belief is that this does not, and, in the nature of their relations, cannot take place.

That the calcific changes which occur in the dentine of the crown, and in the enamel in young teeth, are due to the pulp, needs no demonstration, as the retrograde metamorphosis in these tissues which results from the death of the pulp, is sufficient proof of the fact that it is their only source of sensation and sustenance.

**Functions of
the Pulp and the
Pericementum.**

It is then the function of the pulp in the erupted tooth to recalcify, reconstruct, nourish and protect the dentine and enamel in the crown; and, if in the crown, why not in the dentine of the root? That it does this is abundantly shown in the hardening of

the dentine in this part of the tooth; in the extension of the calcifying process into the territory of the cementum, and the conversion of it into more or less perfect dentine; in the occasional deposits of enamel found in the cementum; and in the withdrawal of the alveolar process from about the roots of many teeth, which have living pulps, after the period of middle adult life.

It is not the function of the pericementum to calcify or in any other way impair the vascularity of the cementum; this tendency or influence is derived from the pulp alone. Demonstrations of this fact are found in cases of devitalization of pulps in young teeth, where the cementum often receives accretions in the form of exostosis; for it is a matter of observation that the roots of young teeth which have been any considerable time devitalized are exostosed to a greater or less extent. This form of exostosis taken on through the agency of the pericementum alone, seldom or never occasions pain in the teeth, and this certainly points to unimpaired vitality and nerve supply in the cementum after devitaliza-

tion of the pulp, and to the pericementum as the care-taker of the cementum; and, consequently, to the belief that this is its true and only function. It is thus apparent that a tooth is endowed with two separate and distinct sources of life, the one derived from the pericementum for the control of the cementum in all its substance, and the other the pulp, which governs all of the enamel and the dentine and their connective tissue, and this important fact must be remembered in all our studies relating to pulpless teeth and roots, if a true basis of treatment for such teeth is ever to be reached.

Microscopic Appearance of Dead Dentine. It is of little consequence what filling material may be introduced into the root-canal, if the devitalized dentine and its contents becomes repellent to the cementum and the pericementum; there remains in such case little comfort or usefulness to the tooth.

Dr. Bödecker, speaking of the appearance of dead dentine under a power of twelve hundred diameters says, "The dentinal fibres appear shriveled up to rows of minute granules, not always in the center of the canaliculus, but frequently quite near to one of its walls.

"The basis-substance shows a rather indistinct dark violet reticulum with numerous interruptions.

"The facts here described suffice in my judgment to determine the nature of the reticulum pervading the whole of the dentine; it is of necessity the living matter which is plainly marked in living, and shriveled and reduced to rows of granules, in dead teeth."

Reviewing the conditions presented after the devitalization of the pulp, in the light of the microscopical researches here presented, we have first: the pulp cavity and canal in the root, with their contents of pulp substance and linings of cavities; and second, the contents of the dentinal tubuli, the connective tissue, basis-substance or reticulum and the matter of the interzonal layer. This is now all dead matter, and subject to change and decay as is dead animal tissue wherever found.

The one source of vitality and nourishment for all the interior structures of the tooth having been destroyed, there remains only that life which retains the tooth within the alveolus, viz., the cementum and the pericementum.

What will best conserve the normal activity of the living cementum in its new relations, and assist it to remain a living issue, in harmonious association with dead, or at best mummified dentine? Surely not any particular kind of filling material which may be introduced into the root-canal, but rather some form of treatment which shall place beyond the reach of putrefaction, the structures subject, with the death of the pulp, to decomposition and decay?

Disturbances to pulpless teeth come from causes within themselves, and no filling material alone will ever shut them out. Let us then in dealing with such teeth, place the emphasis where it should be placed—upon treatment, and not upon filling materials or methods of applying them.

The True Theory of Treating Pulpless Teeth. Efforts in common practice point the first step in treatment, viz., thorough removal of all pulp tissue, whether it be freshly devitalized, or whether it be in a state of decay and putrescence; and this not only from the pulp cavity but from all canals as

well. This of itself is not always an easy operation, as no inconsiderable difficulties frequently present, to the gaining of access through the cavity of decay, to parts even of the pulp cavity, and much more to many small tortuous and inaccessible roots; still it would be difficult to emphasize too strongly the importance of removing all of the substance of the pulp from the pulp cavity and from the canals in the roots.

No expense of time or patience should be counted too great for its successful accomplishment. Neither should it be considered a sacrifice to remove strong and good dentine where necessary to gain free access to the root-canals. One has said, "cut until entrance can be gained on straight lines," and this, in a general way, is good advice. Not only should the crown be opened up to admit of successful manipulations, but the pulp cavity and the canals should be enlarged and reshaped until they will admit of ready access to all parts.

In this operation is necessitated the removal of the lining membrane of the cavities, the reticulum or basis-substance and intertubular matter which comes away with the removal of the dentine. This should be effected without weakening the crown or root, or doing violence to any vital part of the tooth which remains. The greatest care should be exercised that no encroachment is made upon the cementum, either by too free removal of dentine in its longitudinal aspect, or by piercing it at any point with drill or reamer.

Opening into or through the cementum along the side of the root is a most unfortunate accident, and establishes an unfavorable prognosis. A natural opening of considerable size at the apical end of a root may be of no special significance, if such opening be properly closed in filling, but a drilled opening of equal size and similar location is by no means as easy of treatment, and may prove a great detriment to the root.

The roots requiring greatest care in treatment are, first, small superior laterals; second, first superior bicuspids; third, the buccal roots of superior molars and the mesial roots of lower molars; and fourth, the roots of inferior centrals and laterals. Violence done to a small, irregular

or curved root, by piercing the cementum, seems often to be provocative of more trouble than the opening through a large and well formed root, and yet it is frequently found that where the danger of piercing the root from enlargement of the canal is greatest, the necessity for entrance to the canal for the complete removal of the pulp, is the more imperative, and thus is presented the importance of patient and skillful manipulation; and nowhere in dental operations is greater skill and good judgment required than in opening and cleansing many root-canals.

Assuming now that the mass of pulp material in the pulp cavity and root-canals has all been removed, let us inquire if anything further can or should be done to insure the comfort of the root before filling or crowning.

**Beechwood Creosote
a Reliable Agent in
Root-Canals.**

The only treatment which has proved uniformly satisfactory in my hands, is the creosote treatment. Pure beechwood creosote is a medicament of unfailing utility and permanency when applied within recently devitalized teeth and roots. It is safe, non-irritating and effectual. It is the one material which, when used after cleansing of the canals, neutralizes and renders harmless, even in the young and imperfectly calcified teeth, any decomposition arising from the basis-substance, intertubular matter, or from shreds of pulp tissue in portions of absolutely inaccessible pulp canals.

It places and keeps the devitalized dentine of the roots in harmonious relation with the living cementum which surrounds it, retaining the creosote odor, and consequently its control over decaying matter indefinitely.

Applied on a few fibres of raw cotton (absorbent cotton should never be used in medicinally dressing a tooth or root), twisted into a thread of convenient size, immediately after the removal of a freshly devitalized pulp, it is soothing and most beneficial in its action on the root. Such dressing should be kept sealed in the root for from twenty-four to forty-eight hours, and for a longer time in young unconsolidated or imperfectly calcified teeth, that the influence of the creosote may permeate to all parts of the dentine.

It should be carefully noted that whilst it may be freely and universally applied within a root from which an odorless pulp has been removed, great care and caution should be exercised in applying it to roots containing putrescent matter. A soothing, quieting, beneficial application in the one case, it becomes a violent instigator of periosteal inflammation in the other. To this, I apprehend, is largely due the disuse of creosote in the treatment of roots, especially putrescent roots, and yet the creosote treatment is of even greater benefit to the putrescent root than to the odorless one.

In the treatment of teeth and roots with putrescent pulps, the effort should be made first to remove all putrescent matter and disinfect with creosote. In this operation, only plain nerve instruments or broaches should be used. No cotton should be attached to the instrument in an effort to facilitate cleansing.

After cleansing the root and applying the creosote carefully, the root should be left entirely open for a time. If any dressing is used, it should be merely a pledge of cotton very loosely applied in the cavity of the tooth, simply to protect it from food and extraneous matter. In twenty-four to forty-eight hours the operation of cleansing the root with creosote on plain instruments can be repeated, when if there be no signs of periosteal inflammation, the root may be more thoroughly cleansed and deodorized by using the creosote on a few fibres of cotton rolled on the instrument, and afterwards by introducing very loosely into the root a thread of cotton dipped in creosote.

The main cavity should again be very loosely closed with cotton, the gum over the root touched with iodine, and the tooth allowed to remain quiet until another sitting, when after re-cleansing the root, it can probably be stopped tightly with the cotton dressings saturated in creosote. When the tooth will bear such dressing for a day or two, and the cotton comes from the root having the odor of creosote only, the tooth or root is in the best possible condition for filling or crowning, and either operation may be performed without apprehension of after trouble.

If the theory of two sources of life to the tooth has been successfully established, and I believe it has, it stamps at once as fallacious and untenable, the impression so generally prevalent in the profession, that odors and putrescent conditions found within treated teeth come from sources without the tooth, or that they result from the use of special filling materials.

It is indisputable that all odors arising from the cavities of devitalized teeth come from decomposition of the matter within the tooth itself. Arising more commonly from some pulp remains, they may and do have their origin in the decomposition of the basis-substance, intertubular and other matter of the dentine, especially in young teeth subject to destruction of the pulp, disorganization and decay.

Whilst the title of this paper would readily admit of closing at this point, it would nevertheless seem incomplete without some reference to materials and methods for root filling.

As has been stated, the emphasis should in all cases be placed upon treatment for roots rather than upon methods or materials for filling them, and yet there is a judicious discretion to be

exercised in the choice and use of materials. Certain of the materials in general use are practically, if not positively, inert and can meet no requirement of a root filling except that of closing the cavity; these are the metals; gold, tin, amalgam and lead; wax and the different preparations of gutta percha, all of which have, for a considerable time, been excluded from our list of desirable filling materials for roots. Of the materials more or less antiseptic and medicinal in their action, we have medicated wooden plugs, medicated cotton, chloro-percha, the phosphates and the oxy-chlorides. A wooden plug saturated in creosote, or chloro-percha may, in favorable conditions and places, make a desirable filling in carefully treated roots, but for plain accessible roots which can be kept dry whilst filling, the preference is given to the oxy-chlorides carried to place on cotton. For small roots difficult of access, preference is given to fibres of raw cotton, twisted into a thread of convenient size, saturated in creosote and carefully packed in the canal.

For root fillings in conjunction with posts, for retaining any form of crown, even the Bonwill crown, the decided preference is given to the phosphates.

The Study of Anatomy.*

By W. C. BARRETT, M.D., D.D.S., M.D.S., Buffalo, N. Y.

*Read by request before the National Association of Dental Faculties, Old Point Comfort,
July 31, 1897.*

This association has wrought a great work in securing the adoption of something like uniformity of action in the admission of students, and in raising the general educational standard. If one would have some comprehension of its beneficent influence, he has but to reflect upon what was the general character of American schools, and what their reputation abroad before the organization of the National Association of Dental Faculties, as compared with the present condition. And yet it has done but a small proportion of its manifest duty. Its accomplishments have been elementary.

It is not too much to say that our professional reputation must be what our colleges make it. We are the educators of those who are to be the leaders in the professional matters of the future. The next generation of dentists will be what we shall make it. Legislators may pass laws to regulate and restrict dental practice, but the stream can rise no higher

*Copy furnished by courtesy of *Dental Cosmos*.

than the fountain-head, and the practitioner of to-morrow must get his training and derive his professional knowledge from the school of to-day. He must enter the profession by submitting himself to our guidance. The colleges are the fountain-head, and the stream will be limpid or foul according to whether we purify or contaminate it.

This should be a proud position. It certainly is a responsible one, and woe betide the college professor who does not realize his accountability. The man who accepts the honor which may appertain to this distinguished station, without striving his utmost to be in every way worthy of it, to fulfill every duty with an eye single to the best interests of student and profession, is unworthy a place in our ranks. He who assumes to arm the young men of our country for the battle of life, to fit them and equip them for an honorable career simply that he may minister to his own good, who takes the teacher's place and ascends the instructors rostrum from selfish motives, is a worse hypocrite than the preacher whose everyday life belies his own sermons.

I believe that we are all sincere in desiring to make our schools, and through them the profession, all that they should be. To secure this it is not enough that we look solely to the preliminary qualifications of those whom we accept as candidates for a confidential position in American families. We need to make our instruction as perfect as possible. This cannot be done unless there is a generally accepted standard, and some uniformity in system. At present one of our greatest sources of weakness lies in the fact that there is no common comprehension of a standard of methods. One school begins instruction with the alphabet, proceeds to the construction of simple words, and by regular gradations to the building up of sentences. Another commences by an analysis of the sentence into its component words, and then studies the elementary symbols constituting the words.

That is, one teacher is synthetical, and the other strictly analytical. A student takes his first and second year in one school, and then circumstances or inclination cause him to finish his course at another. He commences under analytical teachers, and closes with a school that only arrives at the stage of analysis in the closing year. Hence, in reality that student never reaches the end of any regularly graded course. In this way the practical efficiency of that graduate can never be assured. Let me illustrate this by the various methods of arriving at a knowledge of that basal study in all schools that attempt to teach the healing art—anatomy.

Some teachers open their course with an examination of the elements of which the human body is composed. That is, they begin with histology. They commence with the cell, and after having given a fair

knowledge of that they proceed to construct the cells into tissues, which are then considered. Then the tissues are built into organs, and finally the organs into the systems which they compose, and they do not arrive at a consideration of the human body as a whole until the last year.

Another pursues the opposite course. He begins with a study of the anatomy as a complete system. He considers its functions, and then goes on to study the organs whose actions make function, and finally to the ultimate elements of which organs and tissues are composed, and whose aberrant functions afford the pathological disturbances with which it is to be his life's work to battle.

The student who spends his first year in a school that begins with histology, and who goes to one that ends its course with tissue elements never gets beyond elementary matters in his entire college training. This certainly will not tend to make the best practitioners, or to raise our profession to its highest point of efficiency. There should be a comprehension of the benefits of each method, a careful discussion of the merits of all systems of teaching, and an intelligent and discriminating adoption of that which is best. To this end I have accepted the invitation of the executive committee to bring this subject before you.

I am a believer in the analytical system. I think

**Advantages of
Analytical Methods
in Teaching.** it is easier to arrive at an understanding by taking in pieces that which we do not construct, and thus get at a knowledge of the mysteries of that which we must attempt to repair. Let me give you my reasons

for this faith, and then please allow me to listen while you show me wherein I am wrong, or confirm my prepossessions by your own corroborative testimony. Do not then understand me as speaking dogmatically when I propose the following methods in teaching anatomy, but only as offering suggestions.

Our sole reason for examining tissues and organs is that we may learn their action and function. Hence, we should begin with function. This requires that the preliminary examination should be of the system, and not of its organs. The study of anatomy, then, should commence with a general examination of the body as a whole. In a dental school the first year should be devoted to general anatomy, beginning with osteology, or the frame work. Then the viscera should be taken up, and their general morphology and function should be studied. This should be followed by myology, syndesmology and neurology, that a fair idea of the whole body may be obtained. Practical anatomy should be commenced this term, and one extremity dissected. It has sometimes been urged that the student should not dissect until he has learned something of anatomy. This argument would be cogent if the object

were to learn how to dissect. But we dissect to learn anatomy, and do not learn anatomy to discover how best to dissect.

All the study of this year should be general. Not a hint of any specialty should be given, and hence the teacher for this year is preferably a medical man. If he is a dentist, he is apt to introduce his specialty too early. The general study of the human body should be finished in the freshman year.

In the second, or junior year, the student begins to differentiate in his study. He should now take up regional anatomy. He has finished the study of the body as a whole. Not that he has learned all that he should, but he has devoted all the time that can be spared out of a three years' course, and he takes up the study of the part to which he is to devote his attention as a specialist. His field is bounded below by the clavicle, and he must have a special, definite, intimate knowledge of all above that.

As a part of this he commences the study of dental anatomy. The first step in this comparative dental anatomy—that is, the study of the dental organs as a whole, precisely as he began the first year in general anatomy. The dentist who learns nothing of the general relations of the teeth, and whose comprehension of them is only that they are organs out of which he is to pick his living, cannot claim any scientific knowledge. The teeth in all the different classes of animals should be generally studied, until the dentition of man is reached, when his teeth should be intimately studied in all their anatomical relations. The anatomy of the second or junior year is, as a whole, devoted to organs, as is that of the first year to systems.

No man can finish the anatomical studies necessary to dental practice in two years. He imperatively needs the third year, and this should be given up to careful examination and investigation of tissues. In this year the microscope is a necessary adjunct. The student has now learned enough of function to comprehend how it modifies, or is modified, by structural development. In this third and finishing year he does not entirely confine his attention to histological anatomy, but he continues regional anatomy, because he is not yet sufficiently familiar with the organs, especially of the head. He also bestows considerable attention upon surgical and morbid or pathological anatomy. But his chief attention is given to structural, or histological anatomy, and he thus finishes his course by attention to the minutiae and detail for which he is unprepared during the first or second year, because his mind usually is not sufficiently trained and disciplined to give him mastery over his attention.

The student who thus advances by regular gradations each year, separately taking up and mastering a definite branch or part of the subject,

will be likely to retain his knowledge, because he has advanced toward it by a direct route, and because each division is made subsidiary to the next, and there is a regular gradation and progress.

If such a system, or if some other regular system, can be adopted in its general features by all of our schools, the grading of one who for any cause changes his college during his course will be greatly facilitated, and he will not be likely to miss any of the sub-divisions. Our graduates will be better qualified for practice, and the tone of the profession will be elevated.

I would pursue the same general plan in the study of chemistry and physiology, the other basal studies of the theoretical curriculum. They should extend through the entire course, the last year in each to be devoted to special instruction adapted to an exclusive dental practice.

Materia medica should begin with the first year, but therapeutics cannot be profitably commenced until the student has obtained some knowledge of drugs, and hence it becomes a second and third-year study, materia medica extending over the first two years.

Embryology properly belongs to the second year, because its study demands an acquaintance with medical terms that are all unfamiliar at the outset, and because it is an intricate and involved matter which requires disciplined attention. Aside from these, there is no reason why it might not be begun with the freshman year.

Metallurgy is a second-year study, because its consideration demands a good acquaintance with general chemical laws, and these are acquired during the first year.

Surgery is a third year study, because it demands not only a complete knowledge of anatomy, but a trained hand and absorbed attention as well. The student should begin the study of surgical pathology in the second year, and it may perhaps form a part of his general pathological studies.

Pathology should be differentiated from operative dentistry. They have very little in common, save that each may be curative. But operative dentistry is wholly mechanical and manipulative, while pathology should cover all medicinal and general treatment. Operative dentistry is largely prophylactic, while pathology is so to but a slight degree. Whatever has to do with the action of drugs, whether generally or topically applied, belongs to pathological practice. In the treatment of alveolar abscess, for instance, operative dentistry has very little part, its practice being confined to that which is mechanical, or that which is done with instruments. I believe that in the past we have not sufficiently distinguished between the two. A sharp line of demarkation should be drawn between that which is mechanical and that which is therapeutical.

It will be seen that I have not attempted to assign any place to the

practical part of dentistry. My subject was the teaching of anatomy, but I have thought it not appropriate to suggest some thought concerning other didactic studies.

Let me repeat that I have only considered the matter tentatively, and realize as fully as any of you that there is room for much consideration and extended discussion before the various studies in our curriculum shall each have been definitely assigned its appropriate place.

National Association of Dental Faculties.*

The fourteenth annual meeting of the National Association of Dental Faculties was held at the Hygeia Hotel, Old Point Comfort, Va., commencing Friday, July 30, 1897.

The following members of the Association were represented as noted below:

Alabama Dental College, Birmingham, Ala.—T. M. Allen.

University of California, Dental Department, San Francisco, Cal.—L. L. Dunbar.

Columbian University, Dental Department, Washington, D. C.—J. Hall Lewis.

Howard University, Dental Department, Washington, D. C.—A. J. Brown.

National University, Dental Department, Washington, D. C.—J. Roland Walton.

Atlanta Dental College, Atlanta, Ga.—William Crenshaw.

Dental Department of Southern Medical College, Atlanta, Ga.—S. W. Foster.

Chicago College of Dental Surgery, Chicago, Ill.—T. W. Brophy, Louis Ottofy.

Northwestern University Dental School, Chicago, Ill.—Theo. Menges.

State University of Iowa, Dental Department, Iowa City, Iowa—W. S. Hosford.

Louisville College of Dentistry, Louisville, Ky.—H. B. Tileston.

Baltimore College of Dental Surgery, Baltimore, Md.—M. W. Foster.

University of Maryland, Dental Department, Baltimore, Md.—F. J. S. Gorgas.

Boston Dental College, Boston, Mass.—J. A. Follett.

Harvard University, Dental Department—Thomas Fillebrown.

* Copy for this report supplied by courtesy of *Dental Cosmos*.

Dental College of the University of Michigan, Ann Arbor, Mich.—J. Taft.

University of Minnesota, Dental Department, Minneapolis, Minn.—W. P. Dickinson.

Kansas City Dental College, Kansas City, Mo.—J. D. Patterson.

Western Dental College, Kansas City, Mo.—D. J. McMillen.

Marion-Sims College of Medicine, Dental Department, St. Louis, Mo.—J. H. Kennerly.

Missouri Dental College, St. Louis, Mo.—A. H. Fuller.

University of Buffalo, Dental Department, Buffalo, N. Y.—W. C. Barrett.

New York College of Dentistry, New York City—F. D. Weisse, J. Bond Littig.

Cincinnati College of Dental Surgery, Cincinnati, O.—G. S. Junkermann.

Ohio College of Dental Surgery, Cincinnati, O.—H. A. Smith.

Western Reserve University, Dental Department, Cleveland, O.—George H. Wilson.

Pennsylvania College of Dental Surgery, Philadelphia, Pa.—C. N. Peirce.

Philadelphia Dental College, Philadelphia, Pa.—S. H. Guilford, Leo Greenbaum.

University of Pennsylvania, Dental Department, Philadelphia, Pa.—James Truman.

Tennessee Medical College, Dental Department, Knoxville, Tenn.—R. N. Kesterson.

Central Tennessee College, Meharry Medical Department, School of Dentistry, Nashville, Tenn.—G. W. Hubbard.

University of Tennessee, Dental Department, Nashville, Tenn.—J. P. Gray, L. G. Noel.

Vanderbilt University, Dental Department, Nashville, Tenn.—H. W. Morgan.

University College of Medicine, Dental Department, Richmond, Va.—L. M. Cowardin.

Royal College of Dental Surgeons, Toronto, Canada—W. E. Willmott.

The following schools were elected to membership:

Milwaukee Medical College, Dental Department, Milwaukee, Wis., represented by Reinhold E. Maercklein.

Tacoma Dental College, Tacoma, Wash., the constitution being signed by proxy by Dr. Kennerly.

New York Dental School, New York City, represented by John I. Hart.

Ohio Medical University, Dental Department, Columbus, O., represented by J. F. Baldwin.

Baltimore Medical College, Dental Department, Baltimore, Md., represented by J. W. Smith and William A. Montell.

The application for membership of the University of Omaha, Dental Department, was laid over till next year, at the request of its officers.

Applications for membership were reported by the executive committee from the Pittsburg Dental College, Pittsburg, Pa.; Dental Department of the College of Physicians and Surgeons, San Francisco, Cal.; Colorado School of Dentistry, Denver, Col.

The following report, laid over from last year, was adopted:

"Your committee on choosing a color respectfully report that they have decided to recommend the standard lilac as the distinctive dental color, and they recommend the adoption of the academic costume according to the requirements observed by the intercollegiate system."

The resolutions laid over from last year, make the annual college term seven full months, and recommending that the annual meetings be held in connection with the National School of Dental Technics, and at a time of the year when the colleges are in session, were negatived.

A committee, consisting of Drs. Henry W. Morgan, M. W. Foster, Theo. Menges, C. N. Peirce and H. A. Smith, was appointed to meet a similar committee from the National Association of Dental Examiners, for the purpose of harmonizing the differences of opinion between the two associations. This committee reported rules which had been agreed upon by the two committees.

The report was discussed at length and again referred to the committee, which later reported, through the executive committee, a resolution, which was adopted, providing for the codifying and arranging of the existing rules of the association, and the preparation of such additional rules as may be deemed advantageous to both organizations in advancing the standard of dental education in the United States. On motion, the committee which had had the matter in charge in the conference was continued for this purpose.

A communication from the Dental Department of the State University of Iowa was received, asking consent of the association to its conferring the honorary degree on Dr. F. P. Weber, of Cherokee, Ia. The request was declined on the ground that it is contrary to the practice of the association.

A similar communication from the University College of Medicine, Dental Department, Richmond, Va., asking the privilege of conferring the

ad cundem degree on Dr. Thomas G. Cowardin, of London, Eng., was refused upon the same grounds.

The rule regarding preliminary qualifications adopted in 1896 was declared to have been adopted in an unconstitutional manner, and was therefore rescinded. The following was adopted in its place, and by unanimous consent was ordered to go into effect at once:

Resolved, That the minimum preliminary education requirement of a college of this association shall be a certificate of entrance to the first year of a high school or—in States that have no high school—of graduation from a grammar school, or its equivalent, to be determined by an examination.

Resolved, That nothing in the above shall be construed to interfere with colleges of this association that are able to maintain a higher standard of preliminary education.

A communication was read from Dr. W. Mitchell, president of the American Dental Club, of London, requesting the appointment of a committee to co-operate with a similar committee in Europe for the purpose of securing just recognition of the diplomas issued by the colleges belonging to the association. The communication was favorably considered, and the president appointed as the committee Drs. W. C. Barrett, D. J. McMillen, S. H. Guilford, A. H. Fuller and Faneuil D. Weisse.

The ad interim committee reported that one new question decided by them during the year was that a student who was in arrears for fees could not be accepted by another college if objection was made by the college to which he was indebted. This ruling was sustained by vote of the association.

The committee also recommended that steps be taken to secure definite knowledge as to the curricula and requirements of foreign colleges, so that the members of the association should be able to decide upon the standing of students coming from them. Referred to the committee appointed to consider the matter of Dr. Mitchell's letter.

A paper prepared by Dr. W. C. Barrett, Buffalo, N. Y., at the request of the executive committee, and entitled "The Study of Anatomy," was read by its author.

The paper was, on motion, directed to be incorporated in the official report, and copies sent to the journals for publication.

A committee, consisting of Drs. S. H. Guilford, Theo. Menges and M. W. Foster, was appointed to select persons to prepare papers on subjects connected with the work of the association, to be read before the next meeting.

Dr. Barrett offered the following, which was adopted:

Resolved, That the final vote upon the admission of a college to this

association shall not hereafter be taken unless a duly certified and qualified delegate is in attendance.

The following resolution, offered by Dr. L. L. Dunbar, was adopted:

Resolved, That in order to maintain a reputable standing in this association no college under its jurisdiction shall permit any member of its faculty or teaching staff, board of trustees or stockholders to serve in a judicial capacity as a member of a State board of examiners.

Dr. Taft offered the following, which was adopted:

Resolved, That a committee of three on curriculum be appointed, whose duty it shall be to compare the schemes of study of the various dental colleges, with the view of harmonizing these schemes and making them as nearly alike as practicable, to report next year.

The committee on text books recommended the following:

Essig's "American Text-Book of Prosthetic Dentistry."

Hodgen's "Dental Metallurgy."

Schafer's "Essentials of Histology," fourth edition.

Abbott's "Principles of Bacteriology," third edition.

Gray's "Anatomy," last edition.

Luff's "Manual of Chemistry."

Burchard's "Compend of Dental Pathology and Therapeutics."

The report was adopted and the committee was instructed to examine Kirk's "American Text-Book of Operative Dentistry," and Marshall's "Injuries and Surgical Diseases of the Face, Mouth and Jaws," and forward their views at the earliest possible moment to the secretary, in order that they may be incorporated in the printed transactions.

A committee, consisting of Drs. M. W. Foster, William Crenshaw and L. G. Noel, reported appreciative resolutions on the death of Drs. Frank Abbott and Francis Peabody, late members, who have died since the last meeting was held. The resolutions were adopted.

The following lie over for final action till next year:

Offered by Dr. H. W. Morgan, seconded by Dr. H. B. Tileston:

Resolved, That on and after the session of 1899-1900, the regular sessions of each college belonging to this association shall be extended to four years.

Dr. J. Taft moved to amend the constitution to require applications for membership to be sent to the secretary of the executive committee instead of to the secretary of the association.

Offered by Dr. T. Fillebrown:

Resolved, That no college connected with this association shall confer any degree as honorary which is usually granted in due course of study and examination. All former rules on the subject are hereby repealed.

Offered by Dr. Barrett:

Resolved, That after the regular session of 1898-1899 the annual college term for the members of the association shall be seven full months.

Dr. Crenshaw moved to strike out rule 3 and adopt the following instead:

Resolved, That the time in which students can enter schools of this association shall be the first ten days of the session of the school, dating from the time announced in its catalogue.

The following were elected officers for the ensuing year: T. W. Brophy, Chicago, president; D. J. McMillen, Kansas City, Mo., vice-president; J. H. Kennerly, St. Louis, Mo., secretary; H. W. Morgan, Nashville, Tenn., treasurer; J. Taft, Cincinnati; Thomas Fillebrown, Boston, Mass.; B. Holly Smith, Baltimore, Md., executive committee. James Truman, Philadelphia; F. J. S. Gorges, Baltimore; J. Hall Lewis, Washington, D. C., ad interim committee.

The newly elected president, on being installed, announced the following appointments: J. A. Follett, Boston, Mass.; H. A. Smith, Cincinnati, Ohio; L. L. Dunbar, San Francisco, Cal.; J. D. Patterson, Kansas City, Mo.; W. T. McLean, Cincinnati, Ohio, committee on schools. S. H. Guilford, Philadelphia, Pa.; William Crenshaw, Atlanta, Ga.; W. C. Barrett, Buffalo, N. Y.; W. P. Dickinson, Minneapolis, Minn.; Fanueil D. Weisse, New York City, committee on text-books. J. Taft, Cincinnati, Ohio; Edward C. Kirk, Philadelphia, Pa.; A. H. Fuller, St. Louis, Mo., committee to select subjects and essayists for next meeting.

Adjourned to meet at the call of the executive committee.





New Jersey State Dental Society.

TWENTY-SEVENTH ANNUAL MEETING.

The twenty-seventh annual meeting of the New Jersey State Dental Society convened at Atlantic City, July 21, 1897. The first session was opened at ten o'clock on the morning of the twenty-first, with the president, Dr. Harvey Iredell, in the chair. After the usual preliminaries the president read his annual address, which was later referred to a committee of three, Drs. J. Allen Osmun, C. W. F. Holbrook and H. S. Sutphen receiving the appointment. Several applications for membership were referred to the Membership Committee, and after some discussion the committee was directed to report at the afternoon session.

At the afternoon session the committee appointed to consider the president's address submitted the following report, which was accepted.

Report of the Committee on the President's Address.

The committee on the president's address met in pursuance of appointment and beg leave to report the following:

The body of the address covers all the points in the history of our last year's meeting very fully, and we beg leave to report, upon his special recommendation, that they are heartily in accord with the suggestions made by the president in reference to an assistant secretary, and would recommend that the secretary be empowered to select his own assistant.

In reference to changes in the Code of Ethics, your committee would endorse the appointment of a special committee to revise the same.

In regard to dental patents, upon methods of relieving human suffering, the New Jersey State Dental Society stands ever ready, as always in the past, to extend a helping hand in any and every effort to promote this cause.

Your committee desires to emphasize the good points made in the president's address, and to call upon all members to heartily co-operate in their fulfillment. Respectfully submitted,

Committee, H. S. SUTPHEN,
C. W. F. HOLBROOK,
J. ALLEN OSMUN,
Chairman.

Upon recommendation of the Membership Committee the following gentlemen were duly elected by ballot:

Dr. P. G. Voeghtlin, of Madison; Dr. S. E. Slade, of Vineland; Dr. D. W. Valentine, of Englewood; Dr. Nelson M. Chitterling, of Bloomfield; Dr. W. A. Jacquette, of Salem; Dr. Joseph E. Duffield, of Camden; Dr. E. M. Packard, of Atlantic City.

Dr. D. D. Smith, of Philadelphia, then read his paper, after which the following discussion ensued.

Discussion of Paper by Dr. D. D. Smith.

I am booked for a few minutes' occupation of **Dr. J. Foster Flagg.** your time this evening, and so if I were endowed, as my friend Peirce is, with such an immense amount of modesty, I should decline to say anything just at this time. This evening I will demonstrate the utilization of raw cotton, not absorbent cotton, in root canals. One of our graduates of 1896 said, in my little clinic room (a young man who came to us from Iowa, where he was under the instruction of Dr. Hunt): "Doctor Flagg, we have been taught by Prof. Hunt that cotton canal filling is perfectly awful, but I want to say to you that he knows nothing at all about it."

In these cases the trouble comes from the inside always, or nearly every time. Sometimes it may be simply from the fact that the dentine has become a devitalized structure. So with all the creosote treatment to keep the filling perfectly nice inside, I can recognize the fact that from the inside there may come trouble which would require alleviation. As I take it, oxy-chloride of zinc is objectionable in two ways: First, if any of you had occasion to remove a nicely introduced oxy-chloride of zinc filling from a somewhat inaccessible canal, you would find it a rather difficult piece of work; the other trouble is its shrinkage. If you place in a tube a little pellet of oxy-chloride of zinc, in the course of three or four months you can shake it in the tube until it rattles. Zinc phosphate will not; zinc phosphate is a perfect maintainer of its integrity so far as bulk is concerned. Zinc phosphate, in an almost fluid condition, is the thing for filling very large and perfectly accessible canals.

Dr. C. N. Peirce. Mr. Chairman, I would like simply to make an inquiry. While I quite coincide with the statement that raw cotton is superior as a root filling to the prepared cotton, or what we call absorbent cotton, I would like to ask Dr. Smith whether there is anything in the prepared cotton that makes it objectionable, if it is objectionable; any quality that makes it less efficient than the simple raw cotton.

Dr. B. Holly Smith. I cannot see why any man should ever fill the canal of a tooth root with cotton. I think that the older men, who have had opportunities to observe beyond those of the boys, in whose class I pose, should have more correctly judged the results of such treatment and should not have perpetually and continually insisted upon this line of treatment. I can see no reason why a substance less open to criticism, less susceptible to infection, might not be used. I do not believe that the experiments which have been performed on teeth out of the mouth have convinced us who have witnessed them that teeth can be more perfectly filled with cotton than they can be with other materials. I have seen these prayer meeting exhibitions, and oyster-shucking exhibitions and root filling exhibitions, and it has always seemed to me that there is a certain capacity in the stomach of the man who could eat the most clams, that there is a certain capacity in the fingers of the man who can shuck the most oysters and a certain dexterity and manipulative skill in the man who can most perfectly fill a root canal, whether he fills it with cotton, with gold or with something else. Now, the point that I raise is this: Is cotton more adaptable, can it be more easily and more successfully adapted to a root canal than any other agent? If so, does it make the best filling? That is to say, does it succeed in retaining the agents with which it is saturated and which antagonize the development of bacteria? My impression is that cotton in itself is not a material which can be most successfully adapted to root canals; that, being a vegetable substance, it does not of itself contain any virtue, and that it does not retain the agents which are placed in the canal with it to counteract or antagonize the development of such influences. I have always felt—and I have filled a great many canals out of the mouth—that I can pump into a canal a paste and seal the point or apex of the canal more successfully with a paste, which of itself contains agents which antagonize septic conditions, and into this paste I can place a material which is not open to the objections which might be charged against cotton; and I can see no excuse under any circumstances for the use of cotton. I see young men who are practicing dentistry without having had the advantage of instruction from our venerable father of dentistry, Dr. Flagg, who have

not practiced, according to his opinion, becoming methods, who have been deluded, who have been deceived and who have made the practice of dentistry a reproach rather than a success; therefore, I raise my feeble voice in protest against the use of cotton at all.

If there was any point which I tried to make

Dr. D. D. Smith. clear in my paper it was that the more important

point is not the filling of the root; that the important point in the successful treatment of devitalized root or pulp is not the filling material at all, but the treatment of the root. I heard Dr. Flagg, I suppose fifteen years ago, say in a whisper that it makes very little difference whether your root is filled or not; and, gentlemen, that is true, although I did not believe it at the time. You talk about the introduction, the successful or unsuccessful introduction of filling materials into the root, and you talk of cotton as being a material which will absorb something. Where is the absorbed material to come from? Your root canals, if they are normally formed roots, unless the teeth be very young, are in a condition in which your finest probe may not reach the apex, you cannot go through the apical foramen; and I tell you, after an experience of thirty years, I am convinced that nothing comes down through the apical foramen, nor up through the apical foramen, nor through the cemental structure, nor through the dentinal tubules, into the center of the tooth. It does not come that way. The troubles which we are to fight are troubles which, except occasional pericemental difficulties, are within the tooth itself. When you come to understand that those are the conditions which you have to meet before filling a canal, then you will see those points in their true light, and that it makes very little difference really what the root is filled with. There is nothing about it which of necessity demands a filling, and yet there is an instinct within us to fill it. But when we talk of going to the end of the root and stopping that opening through which something might come into the center of the tooth, let us get rid of the idea; it is fallacious. There is no such anatomical condition of the root of a tooth, nothing that will admit of it, and if we have properly treated a tooth and have absolutely put the dentine and its contents into the most harmonious relations with the cemental structure we have done all that can be done with it, we need only to place in it some cotton saturated with creosote, than which there is nothing better I believe. I have no objection to cotton, yet my instinct is for a harder material. Where does the difficulty come from with cotton; where does it reside? It resides or comes simply from our want of appreciation of this simple fact, and not having treated the internal structure of the tooth so as to render

it odorless. When we come to appreciate that fully then we will see that it makes very little difference what we fill these roots with.

In reply to our friend Dr. Smith I will say that I filled, in 1869 or 1870, a superior bicuspid, and filled the root with cotton, saturated with creosote. It was the second bicuspid on the left side; and nineteen years afterward the crown broke away and I cut it off for the purpose of putting on an artificial crown, and I have to affirm that out of that root came the cotton with just the same thorough saturation of creosote as it went into it. Now, who will dare to say, in the face of such an experience, that a properly treated root will not retain a cotton filling. If you take cotton fillings out of roots that have been properly treated I think you will find the same condition, gentlemen. I don't say that I fill with "raw" cotton; I never put cotton into a canal without first saturating it with creosote, nor without first having treated the canal in the way I explained in the paper. If it has been properly done the cotton will come out smelling of the creosote; and when that condition is obtained I believe it makes very little difference what the root is filled with.

In answer to Dr. Peirce's question, as to whether there is anything in the absorbent cotton which renders it deleterious within the tooth, I have only a theory to offer. This decaying substance, this dead dentine, this dead matter which is in the tubules of the dentine, will certainly, in a longer or a shorter time, make an odor within the root. Absorbent cotton will attract water to itself; it will absorb water, it is prepared in such a way that the fibres take up their full capacity of water; and that is what it will do when placed within the root of the tooth. It will absorb this decaying matter, and that remains in the cotton, while if we use raw cotton, saturated with creosote, these odors, if they ever arise, remain dispersed in the tubuli.

Why would it not be more feasible to seal up

Dr. B. Holly Smith. these canals or tubuli with nitrate of silver, or some agent that will keep away the odors that are dispersed throughout the cotton? We know that the cotton which is called absorbent cotton cannot have the same qualities as raw cotton, but even raw cotton is a vegetable substance that absorbs and retains these odors; why not seal up the canal with something else? Is it not better practice to resort to some such expedient as the introduction of nitrate of silver by electrolysis, or the method that employs electricity? Why should we use cotton at all? I must confess that I have removed raw cotton and absorbent cotton from root canals, and I think others have, that was in bad condition.

I do not question that you have found an odor on the cotton so removed. Possibly in four cases out of five you will find an odor when

Dr. D. D. Smith. you remove the cotton, but I think it is beyond contravention that wherever you find that odor you find a root that was not properly treated.

As to the use of nitrate of silver, I have never tried it. It seems to me to be exceedingly cumbersome, although it may be effectual. It cannot be used in the hands of a great many men. I look upon it very much as I do upon a statement made by a prominent man in a dental association meeting two or three years ago, who said he would never allow the saliva to go into the cavity of a tooth. Gentlemen, can you imagine a more absurd statement than that? I cannot conceive of the saliva doing any harm in the root of a tooth, or anywhere else. Nitrate of silver may be better than cotton; but inasmuch as cotton is perfectly satisfactory in my hands, and has been for years, I do not see why I should resort to a cumbersome method of treatment like the introduction of nitrate of silver, and take all the risk of discoloring the teeth.

You ask where the material comes from that

Dr. D. H. Jones. causes the trouble, and that question I would like to answer. I agree with Dr. Smith entirely in regard to root canals which are sealed, but it seems to me that the differentiation between absorbent cotton and that which is not absorbent is simply a part of the line of progression up toward something that will go still further than non-absorbent cotton. If non-absorbents are better than absorbents, it seems to me that we may find substances which would go still further than that, until we get something that will fill the space better; and that space that I refer to is the whole canal which is open. Dr. Smith will agree with me that when a root is prepared—not properly, but as well as a clumsy fellow can do it—that in that canal, no matter how antiseptic we may have made it, we will find some serum coming down, and a very little blood. Considering that this tooth is a foreign body—

Dr. D. D. Smith. It is not a foreign body.

I will say it is a body that is not normally asso-

Dr. D. H. Jones. ciated with its environments, that it is a dead tooth, or a mummy, which is in some degree incompatible with the rest of the system which lies in juxtaposition with it; the cementum does not act like a mummy. The canal being hollow and the apex being open, something comes down into that canal; the question in my mind is, do not the fluids that come down into that canal undergo certain changes which produce inflammation, especially in connection with the mummified cementum, and which make it pretty difficult for the system to bring about a condition of health. It seems to me that there would be danger of deleterious changes coming about from fluids

coming down into the canal and there becoming decomposed, considerably more danger than if the canal were filled with a material that is more impervious to moisture.

There seems to be a misapprehension of what I

Dr. D. D. Smith. endeavored to set forth in the paper as a fact; that a tooth has two sources of life. We ought to get rid of the idea that a tooth with a devitalized pulp is a dead tooth. It is not a dead tooth. That tooth, as far as its relations with the alveolus is concerned, is just as much a living tooth as though it had a vital pulp. The pericementum has resumed its control, and that is what enables us, when we destroy the pulp of the tooth, to say that that tooth will last for an indefinite period of time. That is what enables us, when the natural crown is gone, to place an artificial crown on the root which will do just as good service as the original one. If that is the case, if we can do that, then there must be two sources of life. One source is through the pericemental structure of the tooth, and that source of vitality continues after the pulp is destroyed; and teeth, the pulps of which have been devitalized and removed, may be sustained and do good service for from ten to thirty years, of which fact there is abundant proof. Let us engrift that fact into our minds, that there are two distinct and independent sources of life in a tooth, and then we will be much better able to deal with the question from a reasoning standpoint.

A question was asked about these openings at the apical foramen. There are very few roots that will admit fluids through apical foramen. Some of them do. One of the very best methods of sealing a root canal is to take a little pledget of cotton and saturate it with oxychloride of zinc and put it up to the end of the canal, especially if the opening be a natural opening, one which you have not drilled; and you need not have the slightest fear, after having filled a tooth root in that way, of anything coming down through the apex from the outside of the tooth to make trouble.



National Association of Dental Examiners.

The fourteenth annual session of this organization was called to order at 10:30 a. m. Friday, July 30, 1897, at Old Point Comfort, Va. President Abbott called the meeting to order. The secretary called the roll.

The following committee on credentials was then appointed: Drs. Moore, Parmele and Noble.

The committee on incorporation presented the following report:

Your committee appointed to secure the incorporation of the National Association of Dental Examiners respectfully report that after legal consultation and advice an act of incorporation was prepared and filed, a copy of which is herewith submitted.

Report of Committee on Incorporation. It was found that no one but a legal resident of the District of Columbia could file a charter, so Dr. Wm. S. Donnally's name was substituted by authority of the officers of the Association instead of that of the full committee.

This Association and the incorporators have been severely criticised for this act as of supposed aggression or interference with the prerogatives of the National Association of Faculties and of State Boards.

Your committee disclaim any wish or thought of interference or control of the acts of any State Board; the charter neither gives nor confers power over any State Board or institution.

The charter is a copy of the constitution under which the Association may have a legal status.

The charter is a copy of the constitution under which the Association has worked for years, and has received the approval of prominent men of the profession for the past ten or a dozen years.

Most of the adverse criticism of the objects of the charter has come from ignorance and prejudice which a full understanding of the case will be likely to dispel.

H. B. NOBLE, Chairman.

Dr. Donnally. I suggest a slight amendment. Whatever was done, although it was done by the use of one name, was done by the authority of this Association, and not by the volunteer action of this committee. After the substitution of one name is spoken of I would suggest that there be added "by and with the consent of the officers," or "by the authority of the officers of the Association."

The President. Either way would be right and the suggestion is a good one. I was ready to sanction anything the committee did in the matter as satisfactory. They

understood their business and knew what the Association required and what they intended to do.

After the committee was appointed the question

Dr. Donnelly. was raised whether a non-resident could take a charter, or whether his name could appear in it; it was discussed, and it was said that this committee should go ahead and do what was proper.

Can an individual, not a resident of the State,

The President. join with any other individual and incorporate any body legally?

He can, if he takes legal steps to join with

Dr. Noble. them, and that is a question probably for this body.

Dr. Faught will recollect on this very word "elect" or "elected," we had correspondence and the attorneys said that "elect" was placed there in our act of incorporation for a specific purpose. It says here: "This association consists of the undersigned and such different boards of dental examiners of the several States and Territories and of the District of Columbia as may elect to join it." Now the question comes up at once whether they had elected to join. By intimation they did, when they appointed the committee of this body to get this charter. I do not know whether that would stand legally; they certainly gave us the authority and intimated that that was what they wanted done, and that far elected to join.

Now let me interrupt. Would it not be necessary, or would it be necessary for this body to now sanction what has been done? Would not that be right?

Dr. Noble. Precisely. I supposed that this report of the committee needs the sanction of this body. We acted just as far as we thought we had any authority.

And here is something that would come in right here:

"October 20th, 1896.—A meeting of the incorporators of the National Board of Dental Examiners, held this day at the National University rooms, elected to its membership all State Boards of Dental Examiners having membership in the National Board of Dental Examiners, and adopted the constitution and by-laws of said National Board of Dental Examiners. On motion of Dr. M. F. Findley, Dr. J. T. Abbott, of Manchester, Ia., was elected president; Dr. H. S. Noble, of Washington, D. C., vice-president, and Dr. Charles A. Meeker, of Newark, N. J., secretary and treasurer for the year ending August 5, 1897."

In furtherance of that, here is a paper which I think would make the Association legal throughout the United States. These proceedings were incorporated in our printed proceedings, which were sent throughout the country, and the various State Boards have all subscribed to it. I can read off the states that have subscribed to this act of incorporation. This was done by legal advice, and in order to make it legal I sent this throughout the country, and I have here the States, signed by the president and the secretary of the board, and the names of the boards of examiners who subscribed in the capacity of their boards to these articles of incorporation: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Georgia, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Nebraska, New Jersey, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, Vermont, Washington State, West Virginia. There were five districts there; one of the districts has signed; also Wisconsin.

The only ones I remember that absolutely refused to sign were the states of New York and Illinois. I sent four different communications to Illinois, to Dr. Harlan, and I changed the address each time, to the secretary and members of the board, and they all sent them back, but without the signature of the president and the secretary. I hear that Illinois has a new board now and that Dr. Harlan is out. I had considerable correspondence with New York and they absolutely refused to sign; said they did not have anything to do with it; were not members of the board. Dr. Carr came down to Asbury Park and joined the Association, with the consent of the board. At the Brooklyn meeting this year they had a controversy, and one of the members of the board said that Dr. Carr was not authorized to sign; that he did it on his own responsibility; that they were not members and could not be members on account of their dental law. But the majority of the states are members of our Association.

I have the following communication from California:

* * * * *

California State Board of Dental Examiners, Secretary's office, Benicia. Dr. C. A. Meeker, Secretary National Board of Dental Examiners:

Below you will find a resolution adopted at a meeting of the California State Board of Dental Examiners, held Saturday, May 8, 1897. Respectfully yours,

W. A. MOORE, Secretary.

**Resignation of
California
State Board.**

"Whereas, the California State Board of Dental Examiners was created by the Legislature of this State by statute entitled, "An Act to insure the better education of practitioners of dental surgery and to regulate the practice of dentistry in the State of California," approved March 12, 1885, and

Whereas, the duties and powers of said Board of Dental Examiners are expressly and unequivocally defined by said statute, and

Whereas, said statute makes this board the sole judge of qualification of candidates for examination and license to practice in this State, and also to determine which dental colleges are reputable and to specify those which it considers to be disreputable and therefore cannot delegate such power to any other board or body in this State or other States, and

Whereas, this State Board of Dental Examiners is responsible for its acts to the people of the State of California only, and not to any other State or Territory, and therefore cannot, by virtue of said statute, lawfully delegate or compromise its powers and duties to organizations outside of this State, neither does said statute authorize, permit or suggest any interference, affiliation, alliance, treaty or obligation with or to the management or decision of any other State or Territorial board of dental examiners; neither does said statute counsel or recommend any like interference, alliance, treaty or obligation of other State and Territorial boards in the management and decisions of said California State Board of Dental Examiners, and

Whereas, this State Board of Dental Examiners has hitherto affiliated with an association known as the National Board of Dental Examiners as a member thereof, and

Whereas, said National Board of Dental Examiners exists without authority of law and as such is unrecognized as an official body by this State or the United States, and

Whereas, such membership of the California State Board of Dental Examiners in the National Board of Dental Examiners has been called in question by the courts of this State, to the great detriment of the California State Board of Dental Examiners, be it

Resolved, That after due counsel in the premises herein named it is the opinion of the California State Board of Dental Examiners that its connection with the National Board of Dental Examiners, as a member thereof, is unlawful and in excess of the powers conferred on said California State Board by said statute, and therefore this board hereby withdraws its membership from said National Board of Dental Examiners, together with affiliations, alliance, treaty, compact and compromise of

which such membership is expressed or implied by the rules and regulations to the National Board of Dental Examiners."

Resolved, That the secretary of this State Board be directed to forward a copy of these resolutions and the reasons set forth for the same to the National Board of Dental Examiners.

I would like to say that before I received this

Dr. Meeker. communication I was in receipt of a letter from the California State Board, stating that they wanted to come back into membership.

I never could understand why our friends in Cal-

Dr. Chappell. ifornia did this. Their laws are but very little different from ours and, as I understand, we meet for mutual counsel; we meet to have the representatives from different boards throughout the country talk with us. If that is the case, we have not the power to go to a State and inquire into whether any college has been properly organized. We leave that to the State Boards who have the opportunity to inquire into the matter and report here. That is my understanding of the National Board. As I say, our laws are similar to those of California, but in Indiana we are glad and proud to know that we are members of the National Board. As we sometimes say, when a member of the church gets a little bit wrong, it is a very seasonable time to hold a prayer service with him. I think they will regret what they have done.

I think the California State Board has a slight

Dr. Noble. misunderstanding of the charter. That charter, as I stated in my report, does not give us any authority. They state in their communication that it is without authority of law, but I state most positively that we do have authority, now that we are chartered, and we would be recognized. When we got this charter I had it in my mind that some college, situated in some State, might have a grievance, and they might come to the officers here, and sue them personally for damages. I have been in that situation myself. We reported to the Commissioners of the District of Columbia that we did not think a certain college there was reputable and we would not accept its diplomas. The members of the board were each sued for \$50,000 damages, and we had to employ a lawyer and defend the case. I believe they say that this would not stand and has not proper authority. If there should be such a college in California, and it came to a suit, they would find that we did have a status in these United States; that is exactly what we do have. They misstate it when they say that we have no authority of law or status.

Some people have taken a notion, or it has been

Dr. Donnelly. beaten into their heads by someone who is adverse to the interests of this Association, that the incorpora-

tion of this body is an attempt to give it legal power over the State Boards—an effort to create a power higher than the State Boards. That is a misconception and altogether at variance with the truth. We attempt nothing but the exercise of a little influence by recommendations, and by every means we seek to reach an ideal, or to say what ought to be, by obtaining the wisdom and experience of the different boards, and, after counsel, deciding what is best and what ought to be the best method of doing the work of the different boards of the different States. But as to exercising control, we have never attempted that. We do not propose to go into the District of Columbia, or to California, or anywhere else, and say that we will ignore the plain letter of the law. We simply say what we think is the best way to accomplish the aim and objects of the best dental laws, and to do it through moral influence only. We do not claim any legal authority over State boards.

The President. Dr. Meeker, would it not be well to take a vote, so as to make ourselves an incorporated body? That matter was laid aside; would it not be well to take it up?

Dr. Meeker. Yes, I think so.

It was moved and seconded that the report of the committee on incorporation be adopted and confirmed. A vote was taken and the motion carried unanimously, and the committee discharged with the thanks of the association for the good work which they had done.

Dr. Adams. Mr. President, there are some gentlemen here constituting, I believe, a committee from the National Association of Dental Faculties, who would like to be heard.

The President. We would have no objection.

Dr. Henry Morgan. We have no desire to interrupt your meeting, but we have a communication we desire to present, and ask for immediate action upon the same.

Secretary Meeker read the said communication as follows:

Conference Committee Appointed. "Gentlemen—At the regular meeting of the National Association of Dental Faculties, this day, the following resolution was unanimously adopted:

Whereas, at the request of the president of this association, the executive committee has considered the fact that differences of opinion exist between this association and the National Board of Dental Examiners, therefore be it

Resolved, That as the result of this consideration, the executive committee recommend the appointment of five members of this Association as a committee of conference to meet a similar committee of the National

Association of Dental Examiners to consider the mutual interests of the two associations, and that the board of examiners be informed of this action. J. Taft, T. Fillebrown, B. Holly Smith, Executive Committee.

In accordance with the above resolution, the president appointed Drs. H. W. Morgan, M. W. Foster, Theo. Menges, C. N. Peirce and H. A. Smith.

LOUIS OTTOFY, Secretary.

I move that the communication be received, the recommendation contained therein to be carried out, and committee appointed. Seconded and carried.

Dr. Henry Morgan. As chairman of the committee of the National Association of Faculties I desire to say that as soon as your committee is appointed, if you will notify us, we will meet you at any time that may be convenient.

(Dr. Morgan and the committee from the National Association of Faculties then withdrew.)

The president announced the following committee to confer with the committee of the National Association of Dental Faculties:

Dr. Wm. S. Donnally, Dr. G. E. Adams, Dr. George L. Parmele, Dr. C. G. Edwards and Dr. M. H. Chappell.

Report of the Committee on Colleges, Afternoon Session.

The committee on colleges would respectfully submit the following report:

"The year 1897 has been one in which the work of this office has become thoroughly systematized and placed upon a good working basis. Files have been established for the preservation of the documents relating to the various schools, the numbers upon each corresponding to the number of the various State Boards. We have thus during the year been in thorough touch upon the catalogue of the school. Correspondence has been thoroughly established with all the schools and with the representatives of the various State Boards. We have thus during the year been in thorough touch with those representing the dental educational interests throughout the United States. Our information, therefore, is of the most practical and tangible character and has enabled us to do our work with confidence and to place the Association in possession of a fund of knowledge not only for use in the future, but also to be used retrospectively, with a surety of finding what have been our past actions and decisions.

Your committee on colleges has issued in printed form "Rules and Conditions for Obtaining and Maintaining Recognition of Dental Colleges," as codified by this body last year, and has sent copies to all the colleges and to various State Boards, so that they might be officially informed thereof.

In accordance with rule 1, proper blanks for making application were prepared and issued. These blanks have been found to be of immense value, for certified to as they are by the dean of the college making the application, and also by a representative of the board of the State within whose territory the college is located, after due examination of the correctness of the matter in them, we are thus furnished with positive data, not only upon which to make decisions as to the status of any institution in question, but also to remain as constant evidence of that upon which such action was based.

Your committee has also issued a printed list of the recognized colleges. In accordance with rule 4, we sent out a proper blank for the annual report of each State Board to this Association. In the practical application of the rules and conditions we early found the necessity of making the following decisions, and would take this opportunity of suggesting further necessary changes.

Regarding rule 1, owing to somewhat tautological and obscure wording, it was necessary in many instances to formally state that the requirement to fill out and return the blank applied only to colleges not now on the list of those recognized—that is, to those not on it prior to January 1, 1897. We would suggest that rule 1 should now be changed to read as follows, as more in harmony with the purposes of our Association:

Rule 1. Colleges desiring recognition by the
Rules and Conditions. National Association of Dental Examiners shall
make application for such recognition through the
committee on colleges on blanks provided for that purpose.

Your committee found it necessary in issuing a copy of rules to the colleges to make a total suspension of rule 2, for the reason that we found it difficult to determine how "the prominent local educators were to be remunerated." In making this suspension, however, we invited the faculties of the various colleges to communicate to us their ideas as to the practicability of enforcing this rule, and have received in reply many very interesting communications, the concensus of which is an opinion that while our rule was a good one, and if it were possible to enforce the same would materially tend to elevate the standard of the profession, and that while a great many of the institutions agree to its requirements, a still larger number seem to feel the impossibility of its enforcement at the present time. As these opinions concur with the one previously formed by your committee, we now recommend that this rule, as codified at Saratoga, be stricken out and the following substituted:

Rule 2. The preliminary requirements prescribed by the National Association of Dental Faculties shall be the standard accepted and required by the National Association of Dental Examiners.

As previously stated in this report, rule 3 has stood a test of usefulness and we therefore recommend its continuance, viz.:

Rule 3. The statements set forth in the application of any college for recognition shall be verified, after investigation, by the Board of Dental Examiners of the State in which the college is located, or by other persons designated by the National Association of Dental Examiners, in case no such State Board exists, and the recommendation of such board shall be essential to recognition.

As we find no occasion for the last clause in rule 4, and as we believe the National Association of Dental Examiners capable of dealing with the contingency therein provided for, without stating specifically our action in advance, we recommend that rule 4 be amended so as to read as follows:

Rule 4. The State Boards in connection with this Association are hereby required to become informed of the character of the dental colleges located in their respective States, as to their equipment, facilities and methods of teaching, and shall report annually to this Association wherein they fail to comply with these requirements.

As no reason exists to necessitate our Association going back of the requirements of the laws of the different States, they being specific as to age requirement, we therefore recommend that rule 5 be amended by striking out the last clause so that it shall read as follows:

Rule 5. Attendance of students upon three full courses, of not less than six months' duration each, in separate years, with three months' practical instruction intervening between the courses, shall be required before final examination for graduation.

Your committee has made the interpretation that this rule was complied with as touching the three months' practical instruction between courses, when colleges were able to certify to it—that is, when the instructors actually knew that the students took this time with their preceptors, or afforded them this amount of care and attention during the interval at the college building. Your committee also interpreted that "six months' duration each" meant calendar months—lectures from Oct. 1 to April 1.

We also found it necessary to early suspend rule 6 for the reason that the committee on colleges believes that recognition should be based, not upon the number of professors composing a faculty, but upon the efficiency of the methods of instruction, maintaining, however, that there is a minimum number of professors below which efficiency must necessarily fail, and suggests that number be six. Your committee also interpreted that it is arbitrary to insist upon a division into four dental and six medical subjects, to be covered arbitrarily by three dental and five medical professors—believing the subjects as a rule may be covered either by

dental or medical professors, as may make more convenient combinations to any college in question. We interpreted, however, that the ten subjects as specified should be covered. We therefore recommend that rule 6 be amended so as to read:

Rule 6. Each dental college to be on the list of recognized colleges should have a teaching faculty composed of at least six individuals, and teach the following branches: Operative dentistry, dental prosthetics, dental pathology and oral surgery; also the six branches of anatomy, physiology, chemistry, general pathology (fundamentals), *materia medica* and therapeutics and general surgery. Their students must also be taught the subjects of chemistry and bacteriology in laboratories adapted to the purpose and under suitable instructors. That such special college must possess in addition to suitable lecture rooms, a well appointed dental infirmary and a general prosthetic laboratory, also each college must be provided with facilities suitable for manual training in operative dentistry, and must furnish in this way systematic instruction to its students.

Your committee would recommend the striking out in toto of the rules numbered 7, 8 and 9; and would further suggest that rule 10 be now made rule 7.

Rule 7. These rules and conditions shall apply to all colleges, including those now on the recognized list, as well as to those making application for such recognition.

We would report that we have had the most hearty co-operation of the various State Boards in the conduct of our work, and the most overwhelming evidence of the value of the National Association of Dental Examiners to the individual boards. Numberless have been the times that information concerning the colleges has been sought at our hands; and promptly, correctly and confidently have we found ourselves able to supply the desired information. Standing as your committee does in daily communication with every State in the Union through the double touch with colleges and boards, it becomes a great gatherer of up-to-date information, which it can freely place at any instant at the disposal of any board. Indeed, so large has become the clerical work of your committee that its chairman frankly confesses that he would have been unable to maintain efficiency of service were it not that he has been fortunate enough to possess the assistance of a trained secretary, who having become conversant with the detail of the work has afforded the greatest advantage in bearing the burden.

The reports from the various State Boards, on the blanks furnished according to rule 4, are in the hands of your committee, and will as

they come in from year to year constitute a valuable file of more than hearsay information. Especial mention and acknowledgment is here to be made to the State Boards of Illinois and Kansas for the material assistance they have given your committee regarding Missouri, which was assigned to them by reason of that State not having at that time a board of dental examiners.

The question has arisen as to State Boards registering applicants holding diplomas issued by a school prior to being placed in the recognized list of this Association; and the concurrent question as to whether a diploma, issued by a college before it was recognized by this Association, entitled the holder to an examination before a State Board which accepted the list of the National Association as the official list of its State. In reply to this question, your committee, realizing that graduates from colleges other than those on the recognized list could not be examined by the boards who use the national list as the standard of their States, nor could they be registered in States where the same list was the accepted standard, have stated that each State Board must settle the question for itself and in accordance with its State laws. It being, however, manifestly improper for a State Board, which has in the past accepted the list of the National Association as the official list of its State, to examine the holder of a diploma issued by a college before it was recognized by the National Association or to grant him registration. We would now, however, suggest as the proper solution of both problems that the date of recognition of any institution be placed on the list issued by this Association; and that the question of the eligibility of the candidate for registration or for examination be left for each State Board to determine for itself.

High Preliminary Education a Prerequisite. The National Association of Dental Examiners has during the last year, and particularly during the last few months, through the medium of two editorials written by college professors, been stigmatized as assuming and making "an unwarrantable and impertinent interference with the chartered rights and functions of dental educational institutions." This charge can have no other basis than the fact that this Association has shown a strong desire to cause a high preliminary standard of education to become an established essential to a collegiate course of study in dentistry. History repeats itself. The early practitioners of dentistry, feeling the need of broad professional culture, made overtures to those whose chartered rights invested them with authority to give it. The little band was then insultingly spurned from the doors of medical colleges. They accepted the issue forced upon them by those who thus failed to appreciate their duty:—literature, colleges, a degree and a profession was the result. Then, and only then, did medical men want

it understood that dentistry was a specialty in medicine. In exactly the same way has the question of preliminary education become an issue forced upon the boards of examiners. They have watched for years the pretense upon the part of some colleges to require a high standard for entrance from the men coming to the college doors; and yet when the finished product of these institutions has been handed over to us we have felt that these standards in too many instances existed only on paper.

We have protested without avail, and at last have felt that the salvation of the profession demands that something be done, and we have with reluctance taken up the issue forced upon us.

We believe the question of a high preliminary standard to be the paramount issue of the day. We see it steadily advancing in other educational institutions, and we believe that in dentistry it must become the established fact of the future.

One of the most prominent reasons for the establishment of State laws in dentistry is the protection of the profession, yet we cannot fail to recognize that these very laws have proven two-edged, and in a measure become the protection of a class of practitioners which they were expected to exclude. The man of low education, lacking the polish and sentiment of a highly educated gentleman, lured by the supposed large emoluments of comparatively easy attainment, enters a college, secures his degree, passes a State Board, acquires his license, and enters upon practice on a plane in keeping with his original educational development, and having the same license hung in his office as that exhibited by his brother of more extended culture and professional honor. A public discriminating only on the basis of cost gives to this quackery a successful patronage, and thus aids these men in lowering and degrading the professional status. A high preliminary education starts those only on a professional career who have that polish which is extremely unlikely to eventuate in anything but a high character of professional practice. The claim that the requirement of a high preliminary standard of education will work hardship by debarring many deserving young men is to be met by the fact of experience that anyone really possessing the true metal necessary to practice dentistry will always develop the true grit necessary to acquire the preliminary essential.

We consider the keynote to the present situation and the real object of this Association to be the establishment of a correct list of colleges who educate up to the standard demanded by the needs of the profession. The list to be used by the various State Boards as a guide in their local work. The idea of each State being able to compile a correct list of such colleges is too absurd for discussion. The illegality of this Association doing that work for its component parts is also too far-fetched for consideration.

Of course the right of any State Board to accept or reject the list lies entirely with itself, as does also membership in this organization. Those of us, however, who know and realize these features and who are willing to abide by the rules of this organization, recognize that our strength as an organization is to be limited only by the degree of unity with which State boards stand together.

L. ASHLEY FAUGHT, Chairman.

G. CARLETON BROWN.

The report was received, and the rules read seriatum for discussion and adoption.

Rule 1 was adopted without alteration.

Rule 2 was amended to read: "The preliminary requirements prescribed by the National Association of Dental Faculties shall be the standard accepted and required by the National Association of Dental Examiners, adopted by the National Association of Dental Faculties at Saratoga, in August, 1896."

Rules 3, 4, 5 and 6 were adopted without alteration.

Rule 7 was retained.

In place of rule 8 the following resolution was adopted: "We consider it inadvisable for a member of an examining board to be connected with a dental college in any capacity whatever."

In place of rule 9 the following resolution was adopted: "That we recommend that every college on the recognized list be requested to state in its annual announcement that it complies with the rules and conditions of the National Association of Dental Examiners."

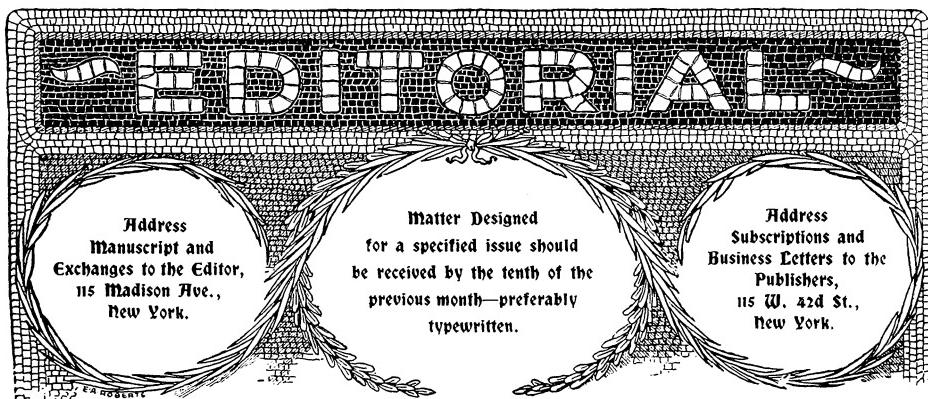
The last and final recommendation we make is

Dr. Faught. that rule 10, as it at present stands, become rule 8, and that these others become footnotes to the rules.

This was adopted.

At the next session it was moved and seconded that the recommendation of the committee on colleges that the date of recognition of any institution be placed upon the list issued by this association; and that the question of the eligibility of the candidate for registration or for examination be left for each State Board to determine for itself be adopted. A vote being taken, the motion was carried.

(To Be Continued.)



Dental Advertising and Dental Ethics.

In the department devoted to "Contemporaneous Literature," in this issue, we publish in full a communication which Mr. Stanton Palmer, advertisement writer, sent to *Printers' Ink*, a trade journal which devotes much of its space to discussions of the science of advertising. Mr. Palmer intimates that the dental magazines would be unwilling to give publicity to what he has to say. It must gratify him therefore to find his views given such wide publicity as will result from their appearance in **ITEMS OF INTEREST**: at the same time it may dawn upon him that the dental world, or that portion of it which he attempts to deride, is not afraid to discuss the question with him. The discussion is doubly opportune from the fact that a number of communications have reached this office, written by dentists who seem in a measure to share the views of Mr. Stanton Palmer, and whose arguments, briefly stated, amount to an assertion that "a dentist has a right to advertise if he wishes?"

Who ever denied this proposition?

It has never been disputed by professional men, nor does even the much maligned "Code of Ethics" deny that a man may manage his business affairs as best pleases himself.

Mr. Stanton Palmer quotes the paragraph in the "Code" which deals with the subject of advertising, and if he will read it again more carefully he will discover that the language is very mild. There is no penalty specified; no rights denied; nothing but the bare assertion that advertising is "unprofessional."

Now, why should this so disturb those who desire to "manage their own business in their own way?" Why should they mind being told that it is "unprofessional" to advertise? Is it because it is true? For certainly it is true. Show me a man who is professional in instinct, and I will defy you to show me his advertisement in any form. Regardless of codes, it is a fact, then, that professional men do not advertise, and being a fact why should there be any objection to printing it in a code?

How are men made to suffer for infringements of the "Code?" In but one way. They are denied admission into professional societies. Here we have the argumentative gentlemen on the hip. You claim, my friend, the right to manage your own affairs in your own fashion. On the same principle, which we admit to be perfectly just, certain men band together into a society; they frame a "constitution and by-laws," and one of the "by-laws" states that to be eligible to membership the candidate must subscribe to and obey the "Code of Ethics." This is entirely according to established custom, is it not? All societies have articles in their by-laws describing "qualifications for membership," and those who cannot "qualify" cannot join. So, if a man prefers to manage his dental business in contravention of the "Code," then he must not ask for membership in dental societies. They have a by-law which makes his election impossible, and they have the same right to the by-law, which he has to utilize the newspapers in his effort to attract patients. If there is any hardship in this, it is not the fault of the professional men.

**The Justness
of the Code
Considered.**

There is another and an important side of this question, which probably has never occurred to Mr. Palmer, because he is a tradesman (which is a perfectly honorable calling), nor to the advertising dentists, because they also are tradesmen. The point for discussion is, "Have the ethical dentists a right to set up a code of rules, for the conduct of the fraternity?" This entirely aside from the question of propriety of maintaining codified rules. Merely as a matter of right, let us consider the subject.

Mr. Stanton Palmer advances the odd proposition that dentists have no right to a code, though he admits that lawyers and doctors do have. I differ from Mr. Palmer. I think the dentist has more right, for more than in either profession does success, financial success, depend upon transmitted knowledge.

This is what we mean by the phrase, "learned and liberal profession." Through love of our profession we spend those hours in study which tradesmen devote to pleasure, and having acquired knowledge we are liberal enough to share it with our brothers without cost to them. Having done this, having made it possible for others to do their work more easily or better, and having imparted the secret gratis, shall we be denied the right of restricting them in the use of it? Suppose that it is a mere sentiment, this idea which we have that we should not advertise, nevertheless, admitting that by advertising our competitor can gain patronage, is it fair that we should first train that man to do our work and then permit him to employ a method of attracting business which we ourselves do not utilize?

In trade no schooling is needed. The man with the best commercial instinct and the longest purse will make the greatest success. If there is a method of buying to special advantage, does the tradesman announce the opportunity to all of his competitors, and invite them to share the chance, or does he buy up all that is offered, as far as his purse will permit, and thus having the advantage, undersell his neighbors? No answer is needed.

In a profession it is different. For example, Dr. Leon J. Williams recently definitely solved the problem of the cause of dental caries. This result was attained after several years of hard work. Thousands of teeth were examined microscopically. Hundreds, if not thousands, of hours were given to the labor. Unquestionably a large sum of money was spent in these researches. At last the truth was known to him. What next? His love for his profession and his patriotism caused him to cross the Atlantic to publish, freely to the world, in his native land, the solution of this great problem. Immediately hundreds of other students have set to work. With this knowledge as a basis, rapid strides will be made in many directions. Within the next five years many practical methods will be advanced whereby teeth may be better filled and treated. All

this knowledge will be imparted freely by these men, in the same spirit of fraternal helpfulness which has actuated Dr. Williams. When published, this knowledge will be as useful to the unethical dentist as to the ethical, and as the original discoverers do not advertise, is it so very unjust that they should exact that their competitors should not do so either?

That it may not appear that this is overdrawn, let us suppose that all the dental colleges should be closed. How would the man of commercial instinct, the man who desires to manage his business in his own way; how would he learn "the trade of dentistry?" According to the old manner. He would bind himself for a term of years to a preceptor, paying for tuition, and he would sign a compact to keep certain secrets imparted to him; not to set up within a certain distance of his teacher; and, if the teacher chose to make it part of the agreement, he would be obliged to promise not to advertise. As between individuals, so it is with the student and the college. College faculties are professional men. They teach dentistry, and a part of the pact with the student is that upon entering the profession he shall maintain the dignity of the calling, and obey the "Code of Ethics." There is no bond to bind obedience, and the diploma cannot be cancelled; but the man who accepts knowledge on these terms and straightway manages his practice in a manner obnoxious to his teachers, and in opposition to his promise, given or implied, cannot truly claim to be the most honorable man in the world. Nor should he complain against the only penalty attached to his act—ostracism.

**Ignorance
of
Dental Graduates.** Mr. Stanton Palmer informs us that he has received many letters from dentists, who commit crimes against the spelling primer. This is a serious charge against the colleges who graduated the men, and unfortunately has been heard before.

Yet after all, it only shows the liberality of the profession. Indeed, the colleges are altogether too liberal in receiving students. Were they more stringent in their demand for high preliminary education, we would have fewer ignorant graduates, and fewer men like Mr. Stanton Palmer offering to write their advertisements for them. By the way, did Mr. Stanton Palmer anticipate that the most learned men in dentistry would seek his aid in writing advertisements? Was it not natural that his applicants should be from those who are unfamiliar with the spelling primer?

The better class of dentists do not need you, Mr. Stanton Palmer, and they not unnaturally object to your aiding those who do.

The ~~Editor's~~ Editor's Corner.

There is an old saying, couched in the vernacular which often is so much more expressive than the Queen's English, informing us that "hindsight is better than foresight."

Before the meeting at Old Point Comfort the question of union of the Southern and American into a National Dental Society was discussed, and it was suggested that there might be tributaries in the East, South and West. This is the plan which was submitted by the committee, and was finally adopted. It seemed wise when offered, because of the fact that the love which the Southern men have for their society was such that the committee and others felt assured that any plan which would disband the Southern would fail, and that on such terms union could not be effected.

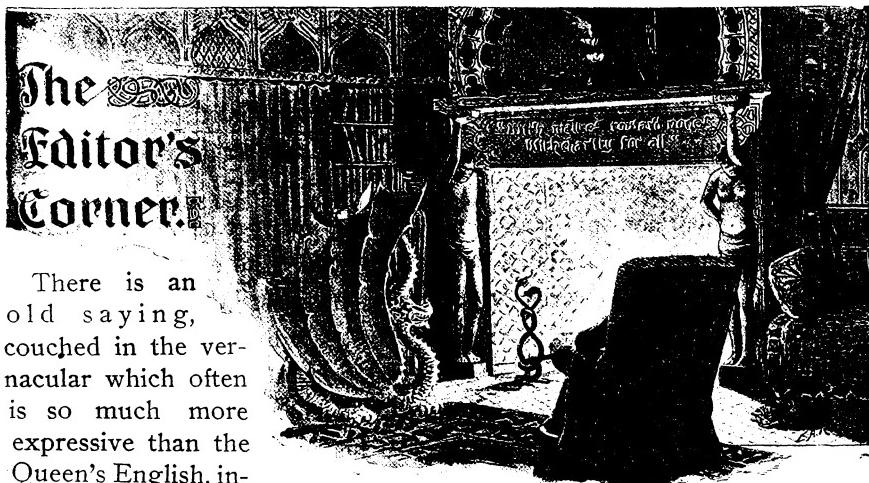
A Weak Point in the Constitution of the National Society.

But immediately after the adoption of the committee's constitution and by-laws, union being an accomplished fact, it became evident to all who analyzed the situation, that the machinery of management for the new National body is cumbersome, and that if not radically altered, ultimate failure must ensue.

The plan presupposes tributary societies in the East, South and West. The Southern men, loyal to that sentiment to which the committee pandered, immediately formed themselves into the "Southern Section of the National Association." Thus with very slight change of form the old Southern Dental Society continues to exist.

The American, on the contrary, disbanded, and its members made no effort to organize an "Eastern Section."

As a fourth anomaly, the first meeting of the National is to be in the West, where no body exists which can be converted into a "Western Section."



Thus the National Society begins with one tributary instead of three. Let us suppose that at, or before the next meeting, the Eastern and Western Sections be organized. Then will it more plainly be seen that this scheme of tributaries is the weak point in the plan.

The National will meet in Omaha. The Southern Section will have a meeting in the South and the Eastern in the East. How many of the Eastern and Southern members will journey to Omaha?

Considering the vastness of this country, it now seems that the only method which will permit a full attendance at the meeting of the National body will be a plan which gives but one great meeting each year. As now contemplated, the National meeting will be merely a meeting of the section in which it occurs. As soon as this truth is demonstrated the Southern men should be ready to disband, and in the interim it might be wise not to organize either of the other sections.

**Our Management
of
Book Reviews.** In general response to some communications which have been received, it may be as well to explain how our department of Book Reviews is managed.

In the first place it is not probable that any one writer, however skilled, would be capable of passing ripe judgment upon all the books which are received. Consequently, we intrust each book as it comes in to a specialist, qualified to prepare a non-partisan, impersonal and just criticism.

By non-partisan is meant that our reviews are never mere book notices. They are prepared for the enlightenment of our readers, and not in the interest of the publishers. The reviewer is expected to read the book, which may explain why our reviews seem to appear tardily at times. By impersonal is meant that the reviewer is expected to forget the name of the author, and to base his criticisms entirely on the matter which appears in the pages of the book. It is our boast that neither friendship nor enmity is allowed to influence one line that appears in ITEMS OF INTEREST, and this is especially applicable to the department of Book Reviews.

**Axiomatic
Editorial
Headlines.**

The *Dental Cosmos* has adopted a new "office rule." The titles of its editorials nowadays may be said to be axiomatic. The first departure of this nature was in connection with the now celebrated editorial entitled, "Our National Beggar on Horseback."

The last appeared in the current issue, and the caption reads, "Le Roi Est Mort—Vive Le Roi." Curiously enough the "Beggar" of the first editorial is more respectfully treated in the last. But then, in the interval, our other National Mendicant has "swapped horses," exchanging one foaled

in 1896—a really promising animal—("Histandard"—sire—Dewey; dam—Committee;) for a spavined old beast—born about 1884—("Nostandard"—sire and dam unknown).

In the August *Cosmos* there was another editorial, the title of which had a tale to tell. The headline reads, "The Wicked Partner in Dental Journalism." After reading this bright bit of satire one is sorrowfully forced to admit that there was room for improvement in the caption. How much more suitable to have let it read: "Oh! What a Good Boy Am I!" One sentiment is worthy of quotation. It reads: "It (i. e., the *Cosmos*) has refused many advertisements which we have afterward seen printed in other dental journals." This charge has frequently been made against the *Cosmos*, and I have always disbelieved it. It is therefore with some surprise that I read this admission.

Leaving Old Point Comfort I went to Washington, where I visited the Army and Navy Museum. In one corner of the part devoted to dentistry I found a dentist of national reputation, busily looking through the back volumes of the *Cosmos*. At his side was a copy of the August number, open at the editorial under discussion. "May I ask what you are doing?" said I. "Certainly," was the reply. "I was told that I could find here all manner of dental curiosities. I am looking in the *Cosmos* for an advertisement of some rival dental goods dealer."

Who First Implanted Teeth. In the American Text-Book of Operative Dentistry there is a chapter dealing with the subject of implantation, in which the author, Dr. Ottofy, says that no one has ever disputed Dr. Younger's claim of being the originator. In this connection the following may have some interest. It is a copy of a printed circular which reached this office during the summer:

Planting? or Implantation?

Who first gave this operation to the profession?

The following is part of an article as published in the *Dental Jairus*, August, 1880, a journal of general circulation on this coast.

"The Dental Jairus—A Criticism." (page 339.)

By W. H. ROBINSON, D.D.S.

"The almost universal success of these operations," (transplanting and replanting) "is astonishing, when we look at the records of them,

and see that not only the way they are performed is careless, but in many cases in utter violation of every principle that should guide us in such operations. When the genius of the profession is directed to these operations, so as to give them the attention they merit we will soon know the modes and principles so well that transplanting or replanting will be operations with fewer failures than now follow ordinary nerve devitalization. Furthermore, we will soon see teeth transplanted into alveoli, that have been without teeth for years. Let me make this point emphatic. Mr. A. has lost an incisor, and wears a cumbrous plate. He presents himself to the dentist, and says he wants a real tooth there, instead of that cumbrous plate-tooth-arrangement. The dentist says call at such a time, and I will perform the operation. In the meantime, the dentist has found a suitable tooth for transplanting into Mr. A.'s mouth. He calls; the dentist makes a socket in the alveolus, inserts the tooth, and if a real live, useful tooth, is a desirable success, then transplanting is a success, for it gives that result. So confident am I that teeth can be successfully planted into an alveolus where the teeth have been out for years, in a socket prepared by the dentist to receive them, that I would have no fears or hesitation in performing it, whenever proper opportunity occurred."

"Implanting" is Dr. Younger's term, first performed by him in 1885. I used the term "Planting" to describe the same operation in 1880, and I orally described this operation before the California State Dental Association in 1881 (Dr. Younger being present), in the discussion of Dr. Thomas' mode of using dry teeth, an imperfect report of which is on page 131, minutes of California State Dental Association, 1881.

W. H. ROBINSON, D. D. S.

1344 Park street, Alameda, Cal., 1897.

**An Error
Corrected.** In the September issue, in the discussion of Cataphoresis, on page 719, Dr. Wiksell's method of making a hollow metallic electrode is improperly stated. His method is to wrap thin platinum around a wire, and by soldering the edges together a hollow tube may be made as small as desired.





From the View Point of the Tradesman.

The following appeared in *Printers' Ink*, August 4th, 1897.

Editor of Printers' Ink—Because I have some experience in advertising for professional men, and am still “warm under the collar” from a hand-to-hand encounter with what they please to call their “Code of Ethics,” I take the liberty of calling your attention to a rather new and somewhat surprising attitude assumed by those for whose profit I believe the “code” to be maintained.

My attention has recently been called to an article under the caption, “Professional (?) Advertising,” appearing in the May issue of the *Dental Cosmos*, a publication devoted in its subscription to the dental art and in its advertising pages to the wares of the S. S. White Dental Manufacturing Company, the publishers. The article was called forth by a perfectly harmless set of resolutions adopted by some one of the clans of the patient, waiting sort of little dentist, held clannish by a few of the satisfied sort of fellows with the big practice.

Following are the resolutions:

“Edward C. Kirk, D. D. S., Philadelphia, Pa.—My Dear Sir: At the regular meeting of the American Academy of Dental Science, held in Boston on March 3, the inclosed resolutions were adopted, and a copy is sent to you for publication. Very truly,

(Signed):

GEORGE H. PAYNE, Cor. Sec.

283 Dartmouth Street, Boston, March 25, 1897.

“The Academy, viewing with dismay the character of the advertisements appearing in some of the self-styled dental journals, whereby secret preparations often of a highly dangerous character are paraded in such company and guise as to deceive those not accustomed to scrutinize closely all medicines thus offered, and more particularly of advertisements soliciting dentists to advertise, announcing that ‘professional dignity and good advertising will work well together,’ giving the name and address of the professional ‘writer of dentists’ advertisements,’ and the unscrupulous acceptance by the above-mentioned journals of advertisements, the character of which is detrimental in the highest degree to the advancement of our profession, the best element of which is striving with self-sacrificing and untiring labor to make it worthy the name and title of a liberal and learned profession; therefore,

"Resolved, That the fellows of the American Academy of Dental Science strongly condemn such advertising, believing that it is degrading and injurious to the good name of the honorable calling they represent, and they further declare that the editors of such journals, allowing the common tricks of trade to dominate that which should be governed by professional dignity, are unworthy to be acknowledged as teachers and respected *confreres* among dentists.

"Resolved, That this resolution be forwarded to the editors of the leading dental journals as expressing the sentiment of the Academy."

My lot is cast with the professional writers of dental advertising, and, as probably to make their meaning lucid, they quote in these resolutions verbatim phrases from my announcements, I may be excused the possible egotism of believing that my efforts have been successful in arraigning against me the hatred of those who deny me, or any other earthly being, the right of doubting or publishing through their organs reasonable argument against their code and creed.

The article in *Cosmos*, referred to printed the resolutions and the following letter, which was sent in reply:

"Dr. G. H. Payne, Boston—My Dear Sir: I am in receipt of your letter of the 25th inst., and copy of the resolutions passed at the last regular meeting of the American Academy of Dental Science, for which please accept my thanks.

"It is a matter of extreme gratification to me that your academy has taken the pronounced stand in the matter which it has . . .

"It may interest you to learn something of the policy of the journal which I have the honor to conduct in its attitude toward the questions under consideration, and to that end I enclose copy of a communication forwarded to a would-be advertiser who desired space in the *Dental Cosmos* for the purpose of calling the attention of our readers to the advantages to be derived from 'professional advertising.'

"(Doesn't that read very oddly?)

"Scarcely an issue of the *Cosmos* is published without our having to deal with this class of individuals, and they are uniformly treated to a letter of declination on the lines of the one inclosed. Yours sincerely,

EDWARD C. KIRK."

The inclosures mentioned were copies of a business letter from the writer offering them an advertisement for one-half page, and their own childish, undignified and unbusiness-like letter, in reply, declining my ad., as they had a perfect right to do, and using a manner in doing so which they had a perfect right to assume, being without any better. These personal communications were also published—rather a breach of business etiquette, although names were omitted. In their reply they state that they must decline to "flaunt in the faces of their readers an invitation to violate the code." Very clumsily put, isn't it? If they have reason to fear an invitation, isn't there reason in supposing that they fear the strength of their "code" to bear questioning? "Flaunting" an invitation to depart

from the ways made righteous by a "code" which ought to know is, I admit, very improper. Perhaps they would like to be told why the Lord put both the apple and the serpent in the garden—and why he didn't punish the apple—or the garden. If so, you will tell them—won't you—Mr. Editor?—in a postscript.

I have lately added the following letter from the publishers of *ITEMS OF INTEREST*, which occupies a sphere very similar to that of *Cosmos*, being published so much in the interests of the Consolidated Dental Manufacturing Company, that they cannot afford to ignore the opinions of those who have grown rich on the code and naturally desire it to maintain. I think this fitly illustrates the difference between the "self-sacrifice" which sounds so well and the knowing "which side one's bread is buttered on," which rings so much truer to human nature:

New York, July 5, 1897.

Mr. Stanton Palmer, Denver, Col.—Dear Sir: Replying to your letter of the 28th ult., we will be unable to publish your advertisement as requested, because several of the dental societies have passed resolutions condemning the advertisements of advertisement writers as unethical, and we have agreed to exclude them in the future. Very truly yours,

GEORGE W. MORRISON.

I believe that an answer from me would not be without interest to many dentists. Mine enemies (for I will cheerfully adopt them as such), believe this also, else they would give to what I have to say as much publicity as to the vague phrases with which they cover the aching void of what they haven't got to say.

Let me quote for you from this much discussed code, which, in the part most faulty, reads as follows:

"It is unprofessional to resort to public advertisements, cards, hand-bills, posters or signs calling attention to peculiar styles of work, lowness of prices, special modes of operations or to claim superiority over other practitioners, to publish reports of cases in the public prints, or to go from house to house to solicit patronage, to recommend nostrums or to perform any other similar acts."

According to this the dentist who advertises puts himself outside the pale of recognition by his professional brother. In the first place, Mr. Editor, do you believe in the infallibility of humanly prescribed ethics (which Mr. Webster defines as the science of human duty pertaining to morals and manners) that require embodiment and constitution in an adopted "code?" I do not. The difference between the morally right and the morally wrong has never been written, but is generally understood. The commandments say: "Thou shalt not"; the law says: "If you do, the penalty will be so and so." There is the question of why this should be an offense and why there should be

**A Tradesman's
Opinion of the Code
of Ethics.**

a penalty that has its end of reason in our own understanding. To all purposes it is the same with good manners. Morals are largely instinctive. Manners are merely training. Neither are verbally prescribed, except in this instance that the "honor and dignity" of the profession of dentistry may be forever preserved. And they have set their little code higher than any creed—in that to question its wisdom is to backslide; to depart from its ways is to fall from the grace of recognition. Isn't it absurd?

When the newly graduated dentist is awarded a diploma by his college he is also awarded a smile of patronizing interest from the dentists with the large and lucrative practices. Any notice whatever from the big fellow tickles the little fellow most to death. When the big fellow calls him his professional brother and tells him that "we" have a dignity to support, it swells the little fellow until his buttons are like to burst with a loud bang. Later on the swelling goes down. Perhaps the proud heart remains. Unless he is peculiarly blessed hunger will eat that, too, in time, when he has worn out many a pair of trousers at the waiting point in supporting a dignity that he comes to feel fits the big fellow as if it was made to his order—which, in truth, it is. And how did the big fellow grow big? That's easy. If by codified effort, then that phrase just used—peculiarly blest—is sure to fit his case in one way or another. How very few of us there are who are peculiarly blest.

Let me call the attention of our codified friends who are "striving with self-sacrificing and untiring labor to make dental science worthy the name of a "liberal and learned profession" to a danger greater than that of advertising, that threatens the "honor and dignity" of their calling. If I am a consummate ass, with less than an ordinary common school education, but with sufficient means to pay for my tuition, I can become an authorized and lawful dental practitioner in less time than I can master the art of carpentry or plumbing. I am in daily correspondence with dentists in all parts of the world. I could exhibit some wondrous examples of their abuse of the mother tongue. Many of them cannot use English with any grammatical accuracy whatever. Lots and lots of them commit such crimes against the spelling primer that the most common words are done out of any possibility of identification by their best friends. In self justification permit me to say that this class of "individuals" seldom become the clients of ad. writers, and to add my lament to that of our codified friends that their profession is truly robbing us of so many rattling good fence painters, hod carriers and dishwashers. Advertising, my dear sirs, will not rob your profession of what your self-sacrifice and untiring labor will fail to give it until it deserves—the name of a liberal and learned profession.

The code by which doctors and lawyers are governed is invested with this much of reason in the clause which prescribes that they shall not advertise. Advertising will not make disease—or litigation. So much of either exist, and if those to profit choose to form a brotherly code of restrictions concerning its distribution, very well and good—but very much weller and gooder for the man who steps out of such restrictions. In dentistry no such reason exists. It is possible to make business. There are half a world full of neglected teeth. In advertising preach the importance of teeth—impress the necessity of care of them. That is the thing—and the best thing—that advertising can do. It is missionary work—spreading the gospel of sound, perfect, well-kept teeth. I consider that point worthy of the attention of dentists. I know, and you know, Mr. Editor, that advertising will do any reasonable thing. Good teeth are reasonable, and any man or woman who hasn't them will freely admit that they should have, but—. Well, put into their thoughts of good teeth a daily memory prod. Make them hard to neglect. Pound away on the same harp—good teeth, good teeth, good teeth—and then better ones. The honor and dignity of the dental profession will grow into a hardy plant that will stand our bustling nineteenth century climate, and not have to be raised on hot-house care.

And, Mr. Big Fellow, one word to you. Your talk of "honor and dignity," "self-sacrifice" and "untiring devotion" is being openly disregarded. That is why you are howling the louder. Yes, it is. Even your recognition is coming to be recognized as like a cake-walk, which a famous Chicago bootblack has told us is a mighty good thing—but we can't eat it.

Does Mr. Editor recall that fable of the two little frogs that fell into the cans of cream? "I'll drown in here," yelled one little frog. "Hustle," advised the other. And the frightened one became more frightened. And the hustler hustled. "I certainly will drown in this stuff," screamed the scared one. "Hustle," was the reply. In the morning the cans were opened. In one was found all that remained earthly of one little frog, and in the other a very much alive little frog sat perched upon a pat of butter. I really believe that it would require a dental society to ask which little frog did well, or doubt the story's relevance. But don't you think it very probable that "froggy" could tell 'em? Yours for hustling,

STANTON PALMER.



BOOK REVIEWS

Gray's Anatomy, Descriptive and Surgical.

A New Edition, Thoroughly Revised by American Authorities, from the Thirteenth English Edition.

Edited by T. PICKERING PICK, F.R.C.S.

With 772 illustrations, many of which are new. 820 pp. 1249. Lea Bros. & Co. Philadelphia and New York, 1897.

Since its first publication in 1858 this work has been recognized by all institutions as the standard work on Anatomy. While in all the different editions that have heretofore appeared marked improvement and changes have been made, still the portion concerning the mouth and teeth have always been an "eye sore" to the dentist on account of the lack of appreciation of the advances made in dental anatomy and of the obsolete and vulgar nomenclature introduced. It was anything but gratifying to open a standard medical work and read that the "fang of the eye tooth contained within itself the nerve of the tooth," etc.

No more patent evidence of the coming role which the mouth is bound to play in the sphere of general medicine can be found than that in this new edition the section on the mouth and teeth has been entirely rewritten by Prof. H. H. Burchard.

The dentist who takes a pride in the fact that he is a dentist need blush no longer when his student opens his "Gray" at this chapter, for Dr. Burchard has summarized in the few pages at his disposal the very latest scientific achievement in dental anatomy and presented for the first time to the medical world a proper dental nomenclature. The illustrations of the individual teeth and of an ideal set of teeth showing the different anatomical divisions, are superior to any yet seen in print. The portions devoted to the development of the teeth and to the articulation is to be especially commended.

Throughout the entire volume there is evidence that the revision has been thorough and scientific. Not the least attractive to the student will be the many illustrations on which important points, as, for example, the courses of the blood vessels, are marked out in color.

American Text-Book of Operative Dentistry.

In Contributions by Eminent Authorities. Edited by EDWARD C. KIRK, D.D.S. Illustrated with 751 Engravings. 800 pp. 702. Lea Bros. & Co., Philadelphia and New York, 1897.

This volume comes to us as a companion work to the "American Text-Book of Prosthetic Dentistry" recently reviewed in these pages. It bears the imprint of the same labor as its companion, is systematic, scientific and comprehensive. It will unquestionably take rank as the leading text-book on operative dentistry. Its pages are prepared with great care and the illustrations merit the highest praise. It is to be regretted that our criticism of the insufficient index of its companion should have borne no fruit, as we must urge the same objection to the index of this volume.

The list of contributors to the work include Professors R. R. Andrews, Henry H. Burchard, Calvin S. Case, W. E. Christensen, D. M. Clapp, M. H. Cryer, Edwin T. Darby, C. L. Goddard, S. H. Guilford, Louis Jack, E. C. Kirk, Louis Ottofy, C. N. Peirce, J. D. Thomas and A. H. Thompson.

Whilst usually the objections to a composite work, as a text book, are well-nigh insurmountable, yet the editor has shown remarkable skill in toning down the mannerisms and personal hobbies of the several contributors, blending the mass into the most harmonizing production yet issued in this manner. His introductory remarks are worthy of especial consideration. He calls attention to the necessity for the operative dentistry to keep abreast of the surgeon demanding the same asepsis that is required in capital operations. It is a magnificent plea for the more extensive use of the rubber dam and we agree so thoroughly with his views as to quote his conclusion: "The time is at hand, if, indeed, it has not already arrived, when prevalent inflammations following dental treatment will be regarded with the same condemnation of the dentist as of the general surgeon."

It is utterly impossible for us to give an impartial review of this volume without taking up each contributor separately, as we did with the prosthetic volume.

The volume opens with a chapter devoted to the "Macroscopic Anatomy of the Human Teeth," by Alton Howard Thompson, D. D. S.

No one is better qualified to write this chapter.

A. H. Thompson, D.D.S. He gives a very lucid explanation of the various types of dental arches from the absolutely square (Irish-Scotch) to the round V arch. He has beautifully illustrated how

the various individual teeth should occlude, demonstrating both pictorially and by example the horizon of the line of occlusion and plane of occlusion. It is doubtful if any one will ever surpass Dr. Thompson in the minute anatomical description of each individual tooth portrayed by him. It will very likely remain an authority in any case where there is any doubt as to the position in the jaw of any particular tooth. His chapter, though short, represents the results of years of careful study.

Chapter II., "The Embryology and Histology of the Dental Tissues." By R. R. Andrews, A. M., D. D. S.

The writing of this chapter has been most acceptably performed by Prof. Andrews, it is in his usual clear-cut style and is illustrated by engravings of forty-four different sections, all worthy of the student's careful attention. It is not in the province of this review to enter into the field of histological contention, though in all due fairness to the author we must add that he has in a very liberal degree noted the opinions of some of his most bitter antagonists and it would be a very poor student who could not obtain an adequate knowledge of tooth development from this chapter.

(To be continued).

Accidents and Emergencies.

A Manual of the Treatment of Surgical and Medical Emergencies in the Absence of a Physician.

By CHARLES W. DULLES, M.D.

Fifth edition, thoroughly revised and enlarged, with new illustrations. P. Blakiston, Son & Co., Philadelphia, Publishers.

Here is a valuable little book which should be in the possession of every dentist. It is written for the enlightenment of the general public, and especially of those whose regular business brings them often into the presence of accidents, such for example as trainmen and managers of factories and mills; but the dentist can make a more intelligent use of the manual than any others, considering that it teaches methods of treatment in the absence of a physician. In such an emergency a dentist with his medical training, and equipped with the special knowledge imparted in this book, could be of inestimable service to the sufferer.

The past few years have witnessed an ever-growing fondness for outdoor sports, evinced as an increasingly conspicuous national trait in the American people.

The bicycle has been an important influence in this direction, because it has afforded opportunity for the sexes to take their outing pleasures in company, yet it is the bicycle more than any other form of athletic exercise which is the prolific cause of serious accidents.

Athletic games at which bicycle races are held have been a regular Saturday afternoon attraction in all large cities this year, and it has been the exception when no accidents have occurred. It is no uncommon occurrence for the manager of the games to ask: "Is there a physician in the grand stand?" and, oddly enough, the responses have been very rare. Either the doctors do not relish the idea of work when out for pleasure, or else they do not see a "fee" in sight. On these occasions the dentist, though having an impulse to aid the injured, feels a hesitancy which would not be experienced were he familiar with the simple directions so admirably set forth in Dr. Dulles's treatise. The knowledge would also be eminently useful during wheeling tours into districts far from the office of a physician. Indeed, it is not at all improbable that, were a dentist familiar with the best methods of procedure in cases of accident he would always carry a sort of ambulance outfit in his bicycle bag.

Correspondence.

To the Editor ITEMS OF INTEREST.

In reading the article of Dr. C. G. Edwards on "Dental Medicine" in August number of ITEMS OF INTEREST, on page 594, he says that one fluid ounce of papine is equal to one-eighth grain of morphia.

Now the manufacturers, Battle & Co., of St. Louis, say one fluid drachm is equal to one-eighth grain of morphia. I merely write to call your attention to it, as some one might prescribe one ounce of papine and fatal results might follow, as that amount would be equivalent to one grain of morphia.

Further on he also says that codene is derived from coal tar.

The ITEMS is my favorite journal, have been taking it since its first number, and I hope you will not think me bold in calling attention to the errors.

J. N. WEBSTER, D. D. S.

Norfolk, Va.

To the Editor ITEMS OF INTEREST.

The August issue of the *Cosmos* contained a wholly unjust, entirely malicious attack on Dr. C. B. Baker, one of the most respected and competent members of the dental profession, protesting against his appointment on the Dental Commission.

It was of course intended only for the journal in which it appeared, and the whole matter was a question of ethics concerning few except those in the practice of dentistry.

The letter has been copied in many of the New England papers, and some of the more sensational ones have enlarged greatly upon it. The method taken to drag a professional gentleman of high repute, before the public on so flimsy a pretext, is unworthy of decent journalism.

There may be a few of the older dentists, like Dr. McManus, who hate to see any new blood come into the commission.

Drs. Graham, Parmlee, Brown, Ryder and Fones practically appointed themselves when the commission was created four years ago. They are all old timers, and hardly abreast of the times.

Their administration of their duties has shown to many of us that there was good reason for a change. In a number of cases of which I personally know, these gentlemen gave certificates to applicants who had no right to them under the law. The members of the Commission view with alarm any change in the personnel, although why they should feel themselves entitled to life positions is hard to understand. The advent of younger men and more enterprising blood into their ranks has apparently frightened them, and those remaining seem to feel that possibly their time may soon come also.

One thing may be put down for fact, and that is that Dr. McManus does not hold the reins over all the dentists in the State. By far the majority are with Dr. Baker in this affair. Dr. McManus tries to make light of Dr. Baker's position in the dental profession, etc., when it is a fact that he has attended more dental conventions and has an acquaintance among more of the leading dentists than almost any other dentist in this vicinity. The matter of graduate or non-graduate has nothing to do with the case. If a man is competent and has had the necessary experience, nothing else is required. Dr. Baker is regarded by his brother dentists as fully qualified in every sense, and the envied position which he occupies in this city, attests to his worth and popularity. The whole matter resolves itself into a question of sour grapes. The few older members who manage the State Society are jealous of some of the younger members, and to see one secure a place on the Dental Commission makes them writhe.

If it comes to a question of graduating, why not bring the other members to account? They are old, respected, and proficient, but with three exceptions, are not graduates. Dr. Baker has practiced for eighteen years, fifteen years having been spent in Connecticut. He can hardly be called an unknown quantity as Dr. McManus tries to make out.

S. P. CRONANA, D. D. S.

Bridgeport, Conn., Aug. 16, 1897.

To the Editor ITEMS OF INTEREST.

It was with surprise and dismay that I read the attack in the *Cosmos* upon Dr. C. B. Baker, who has recently been appointed Dental Commissioner by our Governor, and knowing him to have long occupied an enviable position in the western part of the State, and having a *clientele* of the best families here, I must conclude that the letter resulted from a personal animus and was wholly unwarranted.

Dr. Baker came to Connecticut in 1881, and to this city in 1883, and was associated for three years with a gentleman who was recently president of the Association. After the Society was reorganized, his name was proposed for membership, and his application signed by two well known dentists; he has remained a member ever since, strictly living up to the Code of Ethics. The writer to the *Cosmos* says that the previous incumbent "was displaced at the last minute"; that is not true, as can be proven. It was known, positively, that there was to be a change at the May meeting, and the appointment was not made till July. Every known effort was made to induce His Excellency to change his mind, but he (Governor Cooke) knew that the State Dental Society was composed of about one-sixth of the dentists of the State, and that it was only fair that the other five-sixths should have some representation.

Dr. McManus makes the assertion that Dr. Baker is not a college graduate. This was known years ago, when the name of the latter was proposed for membership. There are only two on the Board, as it now exists, who have degrees. Dr. McManus himself is not a graduate, although he makes use of the title—D. D. S. This degree, a purely honorary one, was bestowed after he had been in practice some years.

While having the most cordial relations with the honored gentleman whom Dr. Baker succeeds, I cannot but feel that our profession is to be the gainer by the infusion of new life into the Commission, and congratulate ourselves that so able a man has been appointed.

C. E. SPAULDING.

Bridgeport, Aug. 15, 1897.

To the Editor ITEMS OF INTEREST.

Sir:—Lord Tennyson wrote, “The old order changeth, giving place to new, lest one good custom should corrupt the world.” I, for one of the dentists of Bridgeport and this State, fail to see the justice of the attack upon Dr. Baker, of this city, which recently appeared in print in *The Dental Cosmos*. I believe I voice the sentiments of the younger members of the profession, when I say that the appointment of Dr. Baker to the office of Dental Commissioner is not displeasing to them. As for charges that he is not well known, and so very young, they are an evidence only that the author of the attack does not know the doctor or his history to any extent. I am prepared to say that his abilities range above the average practitioner, and his practical training was far superior to that which could have been obtained in any dental school of which I know. Perhaps the only inexperience of which he could be rightly charged, is that he failed to sit the prescribed number of years at the feet of some of our professional gentlemen in the State Dental Society, which, it may be, is really essential for one to become what is called “experienced.” The idea that a man must be old to be considered proficient has long been abandoned by thinking people, and, on the other hand, it has been proven that new methods and ideas do not always find a place in the office and practice of some of the old and “experienced.” I say, “All honor to him to whom honor is due,” and respect for age, but let us not clog the wheels of progress, nor render void the force of competition.

Some of the newspapers have unnecessarily attacked Dr. Baker personally, there evidently being more cause for the venom than appears upon the surface.

Dr. Baker possessed full rights as a candidate for Commissionership, and his appointment to that office by the Governor was in all respects proper. Not in any way did he overstep his authority, and the appointment should not be criticised, when the only grounds for so doing are those of jealousy, bigotry, or, perhaps, malice. Very truly,

F. H. JACKMAN, D. D. S.

Bridgeport, August 14, 1897.



In Memoriam

Dr. W. A. Taft.

Dr. W. A. Taft died on July 21, 1897, of hemorrhage of the lungs.

Deceased was a native of Potsdam, N. Y., where he resided until after his graduation from the "P. D. C." in '94. He then located in Scranton, Pa., where he followed his profession until his death.

Dr. Taft was still a young man, being less than thirty, yet had acquired considerable skill and reputation in his chosen profession. Having been married last October, he leaves a young and devoted wife to mourn his loss. His many friends mourn the loss of a dear friend, a devoted Christian and a professional gentleman.

Dr. Samuel Hayes.

Died at his home in Pittsburg, Pa., June 10, 1897, Dr. Samuel J. Hayes.

Dr. Hayes was born on a large farm near Johnstown, Pa., June 22, 1833. He entered college when about eighteen years of age, paying his way through a course of study principally by teaching. Subsequently he finished his training with a theological course and served in the pastorate for several years, being considered successful both in the denomination of United Brethren and the Baptist. In consequence of a severe bronchial affection, he was compelled to turn from his chosen profession and took up the study of dentistry, which he followed during the remainder of life, about thirty years. The defects of anæsthetic agents in general and the crude condition of the science itself early attracted his notice, and he thereafter devoted himself to the development of this art. In his numerous writings and lectures before schools and associations, both medical and dental, he advocated and sought to establish the bed-rock principles of the science, and was considered an eminent authority on the subject, his definitions for anæsthesia and asphyxia being so clear and forcible that they are accepted as standard.

At the time of his death, Dr. Hayes was editor and proprietor of "The Dental and Surgical Microcosm," a journal devoted to the interests of the dental profession and fearlessly advocating the principles of the art and science of anæsthesia as they were established by him. He also had in preparation, a book on the subject, which failing health compelled him to defer and which is not yet completed.